

REPRESENTATIONS OF ENVIRONMENTAL LITERACY: A CONTENT
ANALYSIS OF PICTURE STORYBOOKS FOR 48-72-MONTH-OLD
CHILDREN

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ANALYSIS OF PICTURE STORYBOOKS FOR 48-72-MONTH-OLD
CHILDREN**

submitted by **TUBA ÖZGÜL** in partial fulfillment of the requirements for the degree of **Master of Science in Elementary and Early Childhood Education, Early Childhood Education, the Graduate School of Social Sciences of Middle East Technical University** by,

Prof. Dr. Yaşar KONDAKÇI
Dean
Graduate School of Social Sciences

Prof. Dr. Feyza TANTEKİN ERDEN
Head of Department
Department of Elementary and Early Childhood Education

Prof. Dr. Refika OLGAN
Supervisor
Department of Elementary and Early Childhood Education

Examining Committee Members:

Assist. Prof. Dr. Seçil YÜCELYİĞİT (Head of the Examining Committee)
TED University
Department of Elementary and Early Childhood Education

Prof. Dr. Refika OLGAN (Supervisor)
Middle East Technical University
Department of Elementary and Early Childhood Education

Assist. Prof. Dr. Volkan ŞAHİN
Middle East Technical University
Department of Elementary and Early Childhood Education

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name : Tuba ÖZGÜL

Signature:

ABSTRACT

REPRESENTATIONS OF ENVIRONMENTAL LITERACY: A CONTENT ANALYSIS OF PICTURE STORYBOOKS FOR 48-72-MONTH-OLD CHILDREN

ÖZGÜL, Tuba

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This study aimed to investigate the representations of Environmental Literacy components, including environmental knowledge, affective dispositions toward the environment, environmentally responsible behaviors, and environmental skills, in picture storybooks for 48-72-month-old children. Within the scope of the study, 755 picture storybooks published between the years 2010 and 2021 were investigated through content analysis. The appropriate picture storybooks for the inclusion criteria in the Nasreddin Hoca Children's Library in Çankaya, Ankara were examined with the Environmental Literacy codebook developed by the researcher. The characteristics of picture storybooks were analyzed according to publication year, publisher, translation, and award-winning status. Major findings of the study revealed that Environmental Literacy components were observable in 66.7% of titles, 98.9% of cover pictures, and 99.6% of illustrations of picture storybooks. 99.6% of plots in picture storybooks fully presented, and 7.4% of plots partially presented at least one component of Environmental Literacy. Research findings have shown that picture storybooks have great potential in terms of providing environmental knowledge, affective dispositions

toward the environment, and environmentally responsible behaviors. However, environmental skills were presented very rarely in picture storybooks. In the light of the study's findings, various implementations and recommendations for authors, publishers, teachers, parents, and researchers are presented.

Keywords: early childhood environmental education, environmental literacy, children's literature, picture storybook, content analysis

ÖZ

ÇEVRE OKURYAZARLIĞI TEMSİLLERİ: 48-72 AYLIK ÇOCUKLARA YÖNELİK RESİMLİ ÖYKÜ KİTAPLARININ İÇERİK ANALİZİ

ÖZGÜL, Tuba

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Bu çalışma, 48-72 aylık çocuklara yönelik resimli öykü kitaplarında çevre bilgisi, çevreye yönelik duyuşsal eğilimler, çevreye duyarlı davranışlar ve çevresel becerileri içeren Çevre Okuryazarlığı bileşenlerinin temsillerini araştırmayı amaçlamıştır. Çalışma kapsamında 2010-2021 yılları arasında yayınlanmış 755 resimli öykü kitabı içerik analizi yöntemi ile incelenmiştir. Ankara Çankaya'daki Nasreddin Hoca Çocuk Kütüphanesi'nde bulunan ve çalışmanın ölçütlerine uygun resimli öykü kitapları, araştırmacı tarafından geliştirilen Çevre Okuryazarlığı kod kitabı ile incelenmiştir. Resimli öykü kitaplarının özellikleri yayın yılı, yayıncı, çeviri ve ödüllü olma durumuna göre analiz edilmiştir. Araştırmanın önemli bulguları, Çevre Okuryazarlığı bileşenlerinin resimli öykü kitaplarının başlıklarının %66.7'sinde, kapak resimlerinin %98.9'unda ve resimlemelerinin %99.6'sında gözlemlenebilir olduğunu ortaya koymuştur. Resimli öykü kitaplarındaki olay örgülerinin %99.6'sı tamamen, olay örgülerinin ise %7.4'ü kısmen Çevre Okuryazarlığı'nın en az bir bileşenini sunmuştur. Araştırma bulguları, resimli öykü kitaplarının çevresel bilgi çevreye yönelik duygusal eğilimler ve çevresel sorumlu davranışlar sunma açısından büyük bir potansiyele sahip olduğunu göstermiştir. Bununla birlikte, resimli öykü kitaplarında çevresel beceriler

çok nadiren sunulmuştur. Çalışmanın bulguları ışığında yazar, yayıncı, öğretmen, ebeveyn ve araştırmacılara yönelik uygulamalar ve öneriler sunulmuştur.

Anahtar Kelimeler: erken çocuklukta çevre eğitimi, çevre okuryazarlığı, çocuk edebiyatı, resimli öykü kitabı, içerik analizi

To Merciful Mother Nature and All Children...

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LIST OF ABBREVIATIONS

ECE	Early Childhood Education
ECEE	Early Childhood Environmental Education
EE	Environmental Education
EL	Environmental Literacy
ESD	Education for Sustainable Development
MDG	Millenium Development Goals
SDG	Sustainable Development Goals
TRA	Theory of Reasoned Action
TPB	Theory of Planned Behavior
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WCED	World Commission on Environment and Development
WHO	World Health Organization
WWF	World Wildlife Fund

CHAPTER 1

INTRODUCTION

“We do not inherit the Earth from our ancestors; we borrow it from our children.”, according to an ancient proverb that emphasizes the significance of preserving a better environment for future generations (Hoevenaars & van Beijnen, 2015, p.2). Today’s children, on the other hand, are born into an environment plagued by issues such as global warming (Lysack, 2021), climate change (Akitsu & Ishihara, 2018), poverty (Tilbury, 1995), pollution (Kuswendi & Arga, 2020), deforestation (Curdt-Christiansen, 2020), biodiversity loss (Aurelio et al., 2021; Muthukrishnan, 2019), and epidemic (Amardini et al., 2021). According to the World Wildlife Fund’s Living Planet Report, populations of living species, including the mammalian, avian, and fish, decreased by 68 percent, over 85 percent of clean water has been lost, and the ice-free terrain has already been heavily polluted since 1970 (Almond et al., 2020). As a contemporary environmental concern, the worldwide pandemic of Coronavirus Disease 2019 (COVID-19) has resulted in social, economic, and educational losses in addition to the tragic loss of human life (Hu et al., 2021; UNICEF, 2020; WHO, 2021) due to the disruption of the ecosystem balance caused by the unsustainable human-made systems (Lopez-Alcarria et al., 2021). All living things, including humans, depend on healthy, resilient ecosystems, which are crucial in light of the planet’s deteriorating conditions (UN Environment, 2019). Accordingly, this strong connection between the natural world and human actions demonstrates the need for severe sustainable forethoughts to protect the environment.

The underlying causes of the environmental issues can be traced back to human actions and lifestyles (Connell et al., 1999; Rogers et al., 2008; Sage, 1996; Tung et al., 2002). The rapid development of non-environment-friendly technology in the industry and the unsustainable actions of humanity have negatively affected and restructured life on Earth (Davis, 2010). Particularly, with the Industrial Revolution, processing and

distributing natural resources as waste products have destroyed the environment and caused severe environmental catastrophes such as the Bhopal Disaster with the death of thousands of living things. After such environmental damages, people started to find preventive solutions to protect the environment and sustain the resources within the Earth's limited capacity (Davis, 2010; McBride et al., 2013). In parallel, the media concentrated on 'environmental illiterates' who were guilty of polluting and endangering the environment and it openly expressed the need for environmentally responsible behaviors. Then, environmental issues were more deeply discoursed at several national conferences and organizations, and sustainable development began to gain importance after the mid-70s (Marcinkowski, 2006). There, education was promoted as a crucial instrument for raising people's awareness of their environment and potential problems (McBride et al., 2013). Through Environmental Education, subsequently known as Education for Sustainable Development (ESD), the public's comprehension of the need for a sustainable future was significantly strengthened (Filho, 2009). As a result, Environmental Education is closely interconnected to the advancement of the planet's sustainability (Schleicher, 2012).

A review of substantial literature underlines Environmental Education as a powerful force in raising environmentally literate people (Hollweg et al., 2011; Hungerford & Volk, 1990; McBride et al., 2013; Palmer, 1998; Roth, 1992; Simmons, 1998; Stapp, 1978; UNESCO, 1978; Venkataraman, 2008; Yang, 1993). Environmental Education emerged from a movement in the early 1900s that advocated getting children outside to actively experience nature (Disinger, 1983) instead of attempting to expand on conceptual training from the classroom. Erstwhile, it aimed to raise the world population's awareness of environmental problems (UNESCO, 1978). After that, the objectives and pedagogical principles of Environmental Education were specified in universal conferences. For example, Environmental Education was established with three goals in the Tbilisi Declaration (UNESCO, 1978). These goals relate to raising awareness of and concern about the environmental problems, promoting learning opportunities of ecological knowledge, and increasing environmentally responsible behaviors.

According to the Gothenburg Recommendations and the United Nations, the early years are crucial to achieving sustainable development (Davis et al., 2009; Hedefalk

et al., 2014). Early Childhood Environmental Education (ECEE) has evolved into a crucial component of Environmental Education. Since then, early childhood is essential for developing environmental awareness, knowledge, and affective dispositions, environmentally responsible behaviors and environmental skills, which are components of Environmental Literacy (Davis & Gibson, 2006). In addition, UNESCO/UNEP (1990) stated that Environmental Education is critical for developing children who are environmentally literate and would take proactive steps to safeguard the environment and address environmental challenges. As a result, Environmental Literacy has gained importance globally and has been included as a primary goal of Environmental Education (Culen, 2001).

Harvey (1977) defined the environmentally literate person as “one who possesses basic skills, understandings, and feelings for human-environment relationship (p.67)”. Environmental Literacy provides knowledge of living and non-living things, habitat, the solar system, and natural systems, as well as environmental awareness, positive feelings, concern, environmentally responsible behaviors, and environmental skills to deal with environmental issues and support sustainable development (UNESCO, 1989). Environmentally responsible behaviors include actions to save and sustain natural resources and sustain natural resources through reducing water use, recycling, and developing knowledge and competence in environmental issues (Hollweg et al., 2011). Such skills provide cognitive abilities to recognize and solve environmental problems (Broch, 2004). In the existing literature, studies on Environmental Literacy demonstrate that environmental knowledge and affective dispositions like positive feelings influence the intention of environmentally responsible behaviors (Dresner & Gill, 1994; Hungerford & Volk, 1990; Ramsey & Rickson, 1977; Makki, 2003; Meinhold & Malkus, 2005). Therefore, it can be advocated that gaining Environmental Literacy in the early years is essential to raising environmentally responsible behaviors as the touchstone of sustainable development.

Environmental Literacy provides a fundamental practical education that should begin in early childhood settings. In line with this, it was suggested that children at least 48 months old should have a primary focus on increasing their understanding of the environment and their empathy for it (Sobel, 1996). Children's literature is an effective

resource for introducing new ideas or ideals to young children (Chapman & O’Gorman, 2022). Moreover, storytelling may increase comprehension and highlight the subjects in the context of Environmental Education (Hart, 1981). As a result, storytelling times and literature-based activities could be incorporated into the daily schedule of a traditional early childhood setting to promote Environmental Literacy. Due to their limited or nonexistent expertise on these subjects, teachers may find it difficult to incorporate environmental themes into their daily activities (Powers, 2004). On the other hand, since it depicts human experiences from all over the world (Spearman & Eckhoff, 2012), children's literature is an effective and simple way for teachers to introduce environmental concepts with the texts and illustrations.

Picture storybooks are one excellent kind of children's literature that are generally intended for young children (Lynch-Brown & Tomlinson, 1999). Typically, these books have a plot that is presented through contributions from both texts and illustrations (Russel, 2001). Picture storybooks have a wide range of educational potential for young children (Wason-Ellam, 2010) to make environmental elements and issues visible and encourage children to think and learn about environmental issues. The plot and theme of picture books entice children to think critically and create a causal chain between ecological occurrence (Ural, 2013). As a result, they are common early childhood education tools that can facilitate a smooth transition between activities, introduce rules, and have fun with nature-rich environmental elements via narratives and illustrations while supporting children's development (Shine, 1995). Moreover, they are easily accessible materials at home and in classroom environments. According to the Ministry of National Education of Turkey (2013), each preschool classroom should have a library center with picture storybooks.

1.1. Background of the Study

The Brundtland/Our Common Future Report, announced by the World Commission on Environment and Development (WCED), was one of the crucial efforts to produce a worldwide awareness of sustainable development, which was defined as “the development that meets the needs of the present without compromising the ability of future generations to meet their needs.” (WCED, 1987, p.43). The importance of Environmental Education was described in the United Nations Conference on Human

Environment in Stockholm in 1972, Belgrade Charter in 1975, and Tbilisi Conference in 1977. This was followed by the United Nations Conference on Environment and Development (UNCED) held in Rio de Brazil, recognized as the Earth Summit (Drexhage & Murphy, 2010). Following those summits, the Rio Declaration and Agenda 21 were released as the cornerstones of Environmental Education, addressing environmental issues such energy consumption, water shortage, pollution, and deforestation (UNESCO, 1992). In 2015, the United Nations developed a shared framework for environmental regulation known as the 2030 Agenda for Sustainable Development. The Agenda is based on 17 Sustainable Development Goals (SDGs), which aim to reduce poverty, improve public health, promote high-quality education for world citizens, and save the planet with responsible and sustainable actions (Chapman & O’Gorman, 2022; United Nations, 2015). With these attempts, sustainable development gradually moved its emphasis to Education for Sustainable Development in order to become more widely accepted perspective today (Roth, 1992). In line with the United Nations' (UN) highest concern, Education for Sustainable Development (ESD) emphasizes the value of Early Childhood Environmental Education (ECEE) (UNESCO, 2005). It provides opportunities for environmental education and awareness (de Haan, 2010).

Early childhood is a crucial period for development and learning, and prior studies have overemphasized the importance of Environmental Education at this time (Davis, 2008; Wilson, 2010). The effects of early childhood education on children's cognitive, language, social and emotional development have all been examined (Camilli et al., 2010; Mashburn et al., 2008). The National Association for the Education of Young Children (NAEYC) specifically published a policy outlining why the early years are crucial for children's overall development and learning as well as what responsibility early childhood educators may have in directing and facilitating this time period in 1996 (NAEYC, 1996). In light of this, children's environmental knowledge, affective dispositions, behaviors, and skills may be supported through effective early childhood environmental education programs.

By taking into account the Environmental Education goals of the Belgrad Charter (1975), Tbilisi Conference (UNESCO, 1978), Simmons created an Environmental Literacy model in 1995 that includes the categories of affect, ecological knowledge,

socio-political knowledge, environmental issues knowledge, cognitive skills, and environmentally responsible behaviors. The researchers and environmental education organizations later enhanced this modeling of Environmental Literacy considering Simmons's categorization (McBride et al., 2013). It can be asserted that Environmental Education specifies cognitive and affective domains for humans to engage with their environment (Hollweg et al., 2011). Herewith, each environmentally literate person possesses basic cognitive and emotional abilities, understandings, and dispositions regarding the relationship between humans and their environment (Harvey, 1997; Hollweg et al., 2011; Roth, 1992; Simmons, 1998). According to the North American Association for Environmental Education [NAAEE] (2004), Environmental Literacy comprises being aware of and concerned about environmental problems and issues, learning about and developing skills related to the environment, and being driven to take action in these areas. The North American Association for Environmental Education (NAAEE) developed the latest Framework for Environmental Literacy, including knowledge, affective dispositions, skills, and environmentally responsible behavior in personal, social, and physical contexts (Hollweg et al., 2011). As a result, Environmental Literacy has four components; environmental knowledge, affective dispositions toward the environment, environmentally responsible behaviors, and environmental skills (Hollweg et al., 2011; Marcinkowski, 2009; Negev et al., 2008; Simmons, 1998). In the present study, a framework was generated according to models in the literature.

Environmental Literacy framework used in the present study includes four categories, five sub-categories, and fifty-two items. The first category is environmental knowledge. Environmental knowledge has sub-categories of ecological knowledge, cultural, political, and socio-economic knowledge, and knowledge of environmental issues and problems (Hollweg et al., 2011; Marcinkowski, 2001). Ecological knowledge refers to knowledge of living and non-living things in nature, their characteristics, habitat, solar system, food chain, geographical landforms, nature events, and natural history. Cultural, political and socio-economic knowledge refers to knowledge of cultural values, activities, geopolitical position, landforms, and human-related systems like industry, working fields, and transportation. The last sub-category of environmental knowledge includes knowledge of environmental issues and

problems like natural disasters, reduction in biodiversity, deforestation, poverty, pollution, and global warming, as well as environmental solutions (McBride et al., 2013).

The second category of affective dispositions is toward the environment. This category refers to the reflections on environmental problems/issues at the personal level (Chu et al., 2007). It covers appreciation, empathy, respect, positive and negative feeling, concern, willingness to take environmental action, intention to take responsibility for environmental issues, environmental locus of control, and environmental self-efficacy. Environmental appreciation refers to recognizing and caring about the environment (Hsu & Roth, 1998). The phrases of positive and negative feelings refer to how people feel about the environment, including their views and worries regarding certain environmental issues. Environmental locus of control refers to a person's belief in their ability to change an environmental problem due to their behavior (McBride et al., 2013; Peyton & Miller, 1980). Environmental self-efficacy refers to a person's confidence in their ability to carry out behaviors required to produce an environmental solution (Wu & Mweemba, 2010). The beliefs may affect people's worries and awareness of the environmental problem that are reviewed.

The third category is environmentally responsible behaviors. These behaviors include two sub-categories of resource management and production and citizen participation. Resource management covers reducing natural resources use, using eco-friendly vehicles and materials, recycling, reusing, reducing the impact of agriculture, and making compost. Citizen participation covers participation in environmental activities voluntarily, following environmental policies, and developing knowledge and competence in environmental issues (Hollweg et al., 2011; McBride et al., 2013). The last category is related to environmental skills. These skills include identifying, investigating, and analyzing an environmental problem, proposing an environmental solution to the problem, implementing an environmental solution, and evaluating it (Hollweg et al., 2011).

All components within the generated Environmental Literacy framework correspond to environmentally responsible behaviors. Raising environmentally literate individuals

has resulted in more environmentally responsible behaviors (Hungerford & Peyton, 1977). Likewise, the Theory of Planned Behavior explains each behavior of human-being with intention, attitudes, subjective norms, and perceived behavioral control (Bailey, 2006). According to the Theory of Planned Behavior (Ajzen, 1985), environmentally responsible behavior is caused by some predictors, including attitude and intention. Fishbein and Ajzen developed the Theory of Reasoned Action (TRA) in the field of social psychology in 1967, and they expanded this theory by adding perceived behavioral control (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Davis et al., 1989). Its name has changed to the Theory of Planned Behavior (Ajzen, 1991; Ajzen & Fishbein, 1980). The Planned Behavior Theory is the most commonly used social psychological theory that has been confirmed in a wide range of empirical fields to predict and explain the behavior patterns of adults and children (Bamberg et al., 2003; Elliott & Ainsworth, 2012). For example, the dental brushing behavior of preschool children (Soltani et al., 2018) and the physical activity behaviors of young children (Mummery et al., 2000) were examined using this theory.

Studies related to the Theory of Planned Behavior and environmentally responsible behaviors have focused on the intentions of people and predictors of behaviors while buying organic products, picking-up litter, conserving natural resources such as water, and taking action on environmental issues (Abrahamse & Steg, 2011; Chen & Tung, 2010; Richetin et al., 2012; Wan et al., 2014). A study conducted with primary school students revealed that Environmental Education programs enhance the development of an environmentally literate generation and lead to the desired goals of environmentally responsible behaviors concerning the Theory of Planned Behavior (Wong et al., 2018). More precisely, individuals with a high level of Environmental Literacy are willing to take action to support the well-being of others, society, and the environment. They are more likely to participate in sustainable development (Hollweg et al., 2011).

1.2. Significance of the Study

Recent human actions and improvements to living circumstances have required a huge quantity of natural resources (Tung, Huang, & Kawate, 2002). The activities of

humanity might have caused the majority of environmental problems, and human-related negative influences are caused by not being environmentally literate (Maloney & Ward, 1973). Education might be a powerful tool for promoting sustainable habits and developing human-nature relationships (Yorek et al., 2010). The early years of life are undeniably important to gaining children's environmental knowledge, attitudes, behaviors, and skills (Arlemalm-Hagser, 2013; Broch, 2004; Davis & Gibson, 2006; Davis, 2010; Lieflander & Bogner, 2014). According to Morrone et al. (2001), Environmental Literacy includes more than just environmental knowledge; it also includes sensitivity, feelings, curiosity, concern about the environment, environmental self-efficacy, environmentally responsible behaviors, and environmental skills. Similarly, Goldman et al. (2006) expressed Environmental Literacy as “possessing the values, attitudes, and skills that enable knowledge to be converted into action”(p.5). Hence, Environmental Literacy may be essential for children to develop affective dispositions toward the environment, environmentally responsible behaviors, and environmental skills (Basile, 2000; Chawla, 1999; Elliot, 2010; Wilson, 1993).

The majority of the research emphasizes how knowledge, attitudes, and behaviors picked up in early childhood persist throughout one's life (Davis et al., 2008; Madden & Liang, 2017). According to research, children are more sensitive, interested, and willing to taking part in environmental issues than older individuals (Lieflander & Bogner, 2014). Specifically, in the context of Early Childhood Environmental Education (ECEE), children may raise environmental appreciation, awareness, sensitivity, empathy, critical thinking abilities, and sustainable behaviors through developmentally appropriate, child-centered, inquiry-based activities supported via picture storybooks (Ardoin & Bowers, 2020).

Early Childhood Environmental Education is based on two major premises. The first premise is about the conservation of the natural world. The second is related to the healthy development of children (Wilson, 1996). According to Tilbury (1994), the early years are fundamental for acquiring affective dispositions towards the environment. Positive feelings, care, and respect for the environment will likely become deeply entrenched. Similarly, children can grow up with negative attitudes toward the environment in the early years of their lives, but changing them is very

difficult (Stapp, 1978; Wilson, 1996). Therefore, appropriate environmental experience is critical in the early environmental education of children. However, young children in many settings may have fewer opportunities to interact directly with the world of nature. Therefore, children rely more on texts and illustrations to be more aware of the environment (Marriott, 2002).

Since picture storybooks are widely available materials in early childhood education settings and offer messages about social, cultural, and environmental issues with texts and illustrations, children's literature can help increase children's awareness, sensitivity, positive feelings related to the environment (Shine, 1995; Spearman & Eckhoff, 2012; Wason-Ellam, 2010). According to Russell (2001), picture storybooks play a crucial part in children's development of rich language skills and their awareness of and understanding of their surroundings. Picture storybooks are also fantastic sources of various stories and drawings that are fascinating and instructive (Hsao & Shih, 2015). As a result, while exposing children to cultural elements and social values, their cognitive and socioemotional development may be fostered via picture storybooks (Hart, 2002; Pulimeno et al., 2020). With the help of well-designed picture storybooks, children may develop their thoughts, develop a universal mindset, and begin to envision the relationship between humans and environment (Bradbery, 2013; Wason-Ellam, 2010).

Previous studies reveal that picture storybooks for primary, secondary, and high school students can raise environmental knowledge, environmental awareness, positive attitudes, environmentally responsible behaviors, and environmental skills, which are the components of Environmental Literacy (Chu et al., 2007; Erdoğan et al., 2009; Hollweg et al., 2011; Makki et al., 2003; Marcinkowski, 2001; Negev et al., 2008). Furthermore, several studies investigated Environmental Literacy and the indicators of environmentally responsible behaviors among young children around the world, including the nations of South Korea (Chu et al., 2007), the United States (Marcinkowski, 2001), Israel (Negev et al., 2008), and Turkey (Erdoğan et al., 2009). According to study by Marcinkowski (2001), environmental knowledge increases pro-environmental attitudes. Makki et al. (2003) discovered a statistically significant association between affective dispositions toward the environment and

environmentally responsible behaviour. Additionally, environmentally responsible behaviors were predicted by age, gender, education level, and exposure to printed media (Hsu & Roth, 1998; Osbaldiston, 2004). The relevant research, according to a content analysis study on Environmental Literacy in Turkey, primarily target teachers, pre-service teachers, and parents. In terms of early childhood education, these studies are not enough (Timur et al., 2014). Early environmental education is crucial for developing young learners' environmentally responsible behaviors and for giving them environmental knowledge, appreciation, and skills they need to solve environmental issues.

According to the findings of previous studies, there remains a gap in addressing Environmental Literacy during early childhood. The present study aims to provide a comprehensive understanding of Environmental Literacy presented in young children's literature, which has not been investigated systematically. Concerning the given purpose, a systematic presentation of this concept by examining picture storybooks for 48-72-month-old children might be beneficial to describing the current situation of children's literature and identifying areas for improvement among education stakeholders, authors, and publishers. The researcher aims to describe the representations of Environmental Literacy components concerning the title, plot, cover picture, and illustrations of books. In light of the information presented above, the present study aimed to answer the following research questions:

- 1- What are the descriptive characteristics (year of publication, translation status, publisher, awarded with a literary prize or not) of picture storybooks for 48-72-month-old children?
- 2- To what extent are the Environmental Literacy components presented in picture storybooks for 48-72-month-old children?
 - a) What is the variation of the environmental knowledge presented in the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children?

b) What is the variation of affective dispositions towards the environment presented in the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children?

c) What is the variation of the environmentally responsible behaviors presented in the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children?

d) What is the variation of the environmental skills presented in the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children?

3- What is the distribution of Environmental Literacy presented in picture storybooks for 48-72-month-old children according to the year of publication and translation status?

1.3. Definition of Terms

Affective Dispositions towards the Environment: Environmental Education is beyond knowing and recognizing; it aims to establish emotional bonds and show protective attitudes to nature and its elements with sensitivity, empathy, respect, curiosity, positive feeling, and concern (McBride et al., 2013). In this regard, affective dispositions can be defined as individuals' inner reactions toward environmental issues (Hines, Hungerford, & Tomera, 1987; Kals & Maes, 2002; Kollmuss & Agyeman, 2002).

Environmental Appreciation: Environmental appreciation refers to recognizing and caring about the environment (Hsu & Roth, 1998).

Ecological Knowledge: Ecological knowledge refers to knowledge of living and non-living things in nature, their characteristics, habitat, matter cycle, solar system, food chain, geographical landforms, nature events, and natural history (McBride et al., 2013).

Environmental Education (EE): According to UNESCO (1997), Environmental Education is an active process with projects relevant to all topics that supports fostering more self-driven links between people and the natural world. Sustainable development and environmental quality are the goals of Environmental Education.

Environmental Literacy (EL): UNESCO defined Environmental Literacy as a “basic functional education for all people, which provides them with the elementary knowledge, skills, and motives to cope with environmental needs and contribute to sustainable development” (UNESCO, 1997). In the present study, picture storybooks for children aged 4-6 were described by generating a framework with four main components of Environmental Literacy; environmental knowledge, affective dispositions towards the environment, environmentally responsible behaviors, and environmental skills.

Environmental Knowledge: Environmental knowledge refers to having information about the ecological systems, nature history, environmental problems and issues, and cultural, socio-political-economic actions (Hollweg et al., 2011).

Environmentally Responsible Behaviors: It describes “any action, individual or group, directed toward remediation of environmental issues/problems” (Sivek & Hungerford, 1990).

Environmental Skills: Environmental skills refer to abilities to cope with an environmental problem and the steps of solving the problem. These steps include identifying an environmental problem, defining it, proposing a solution, implementing the environmental solution, and evaluating the solution.

Locus of Control: Locus of control can be defined as “an individual’s perception of whether a particular action will result in an anticipated reinforcement in acting (p.31)” (Ramsey, 1993).

Picture Storybook: A picture storybook is a particular kind of children's literature that has plot, and its plot comprises of writings and illustrations (Lynch-Brown & Tomlinson, 1999).

Self-efficacy: A person's self-efficacy refers to their confidence in their ability to carry out the behaviors required to create performance accomplishments (Bandura, 1999).

CHAPTER 2

LITERATURE REVIEW

This chapter introduces the existing literature most relevant to the purposes of the present study. First of all, it addresses the historical roots of Environmental Education. Then, cornerstone historical events including conferences, declarations, and seminars regarding the development of Environmental Education in the World are presented. Thereafter, the conceptual framework of Environmental Literacy is presented. Then, the relevance of various studies about Environmental Education regarding Early Childhood Education and picture storybooks are offered. The researcher also mentions relevant content analysis studies conducted in Turkey and around the world. Finally, empirical national and international studies conducted on picture storybooks for children are presented regarding Environmental Literacy.

2.1. Historical Roots of Environmental Education

The development of Environmental Education internationally and in Turkey is addressed in this section in order to conceptualize and portray a clear picture of Environmental Literacy, which is affirmatively one of the ultimate aims of Environmental Education. Additionally, the historical foundations of Environmental Education and major historical incidences that shaped this education globally and particularly in Turkey are described.

For many years, the damage caused by billions of people all over the world intentionally and accidentally to the environment and the depletion of natural resources have been discussed in many meetings. Many suggestions have been offered, and the principal decisions have been debated. As a result of these meetings, numerous international agreements have been signed with a view to reach agreement of what

constitutes sustainable development. Environmental Education emerged as an effort to cultivate this idea in educational settings.

The roots of Environmental Education can be traced back to as early as the 18th century since the nature study movement was started in 1891 (McCrea, 2006; Nash, 1976). School curriculums started to be redefined according to Wilbur Jackman's Nature Study for the Common Schools (Stapp, 1978). A nature study movement focused on first-hand observation of nature was mentioned by Jean-Jacques Rousseau in *Emile* in 1762. Raising awareness and respect of the natural environment was the main purpose of this movement. Later, an outdoor education movement was initiated during the 1920s (Swan, 1984). The outside of the classroom was seen a laboratory that enables children to learn with direct experiences of nature and to realize natural processes (Disinger, 1983).

One of the main causes of environmental issues has been the expansion in human resource use (Sage, 1996). Environmental concerns have been extensively discussed by several groups and in numerous conferences to deal with environmental change. The World Conservation Union (The International Union for the Conservation of Nature, and Natural Resources [IUCN]) made significant contribution to development of Environmental Education in 1948. In 1968, the term Environmental Education was used firstly by the editor of *The Journal of Environmental Education*, Clay Schoenfeld, then at the National Conference on Environmental Education held in New Jersey (Swan, 1984). By the mid-1960s, Environmental Education had emerged as a different field (Roth, 1992).

The United Nations Conference on Human Environment, held in Stockholm in 1972, articulated the need of environmental education. Then, Environmental Education's role in coping with environmental problems was discussed deeply in preparation of the Belgrade Charter in 1975. Two years later, an Environmental Education Conference was held in Tbilisi in 1977. The purpose of this conference was to outline the pedagogical concepts of environmental education in formal contexts. Additionally, the Tbilisi Declaration outlined three objectives for integrating environmental

information, understanding, values, and skills into environmental education (UNESCO, 1978):

- (i) to foster clear awareness of, and concern about, economic, social, political, and ecological interdependence in urban and rural areas,
- (ii) to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment,
- (iii) to create new patterns of behavior of individuals, groups, and society as a whole towards the environment (p. 26).

It can be claimed that the role of Environmental Education was defined at the Tbilisi conference. It was decided it was based on raising awareness and knowledge of the environment, concerns about the environmental issues, positive attitudes to save natural resources and skills thought necessary to improve the environment through individual and cooperative work with others. According to the Tbilisi Conference Report, Environmental Education must take place in all educational stages, and training people with awareness and responsibilities about environmental problems can successfully integrating it into early childhood education (UNESCO, 1978). The Environmental Education objectives outlined at the Tbilisi Conference remain relevant and look promise for the field's future when the status of Environmental Education's past, present, and future is examined (Potter, 2010). This conference was also considered the origin of Education for Sustainable Development (Davis, 2010). People may learn about the environment and take action for it with the aid of Education for Sustainable Development (ESD) (de Haan, 2010). ESD addresses human consumption and production as well as beliefs, lifestyles, and behaviors. It promotes accountability for one's activities and encourages sustainable conduct (UNESCO, 2014).

Correspondingly, the sustainability movement began to give attention to environmental concerns in 1987. This movement was started to give environmental concerns the same emphasis as social concerns (Marcinkowski, 2006). The Brundtland Report, also known as the Our Common Future Report, was issued in 1987 by the World Commission on Environment and Development (WCED). This study emerged as the most significant effort to spread knowledge of sustainable development beyond just providing guidelines for governments. This report defined sustainable development as “the development that meets the needs of the present without

compromising the ability of future generations to meet their own needs.” (WCED, 1987, p. 43). Furthermore, this report has gained a significant status at the United Nations General Assembly. The international pioneers of this idea would then meet to discuss their suggestions related to sustainable development at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil (UNESCO, 1992). This conference was also named as the Earth Summit (Drexhage & Murphy, 2010). At the conclusion of this conference, Agenda 21 and the Rio Declaration were distributed as the primary sources on the need for environmental education, outlining the main environmental issues of the twenty-first century, such as energy consumption, water scarcity, pollution, deforestation, and global warming, as well as the guiding principles and solutions to these issues. Additionally, the Rio Declaration sought to guarantee life-long learning for all age groups to reach the sustainable development by covering economic, social, and political aspects (UNESCO, 1992). It was believed that it was necessary to educate people to become active and environmentally responsible citizens in terms of environmental protection.

In 2000, most governments had determined some strategies to cope with environmental problems and to expand educational opportunities for children all around world. With this aim, the Millennium Development Goals (MDGs) were developed. These goals were measurable, universal, and preventive from any poverty, hunger, and disease (Prabuddh, 2018). The main purpose of MDGs was leaving no one behind. In 2012, Rio+20 was held with name of the United Nations Conference on Sustainable Development. Herein, the objective of sustainable development was set in terms of goals for environmental, social, and economic aspects. As a result, the concept of Sustainable Development Goals (SDGs) was born. In 2015, the United Nations developed a shared framework for environmental regulation known as the 2030 Agenda for Sustainable Development with 17 new Sustainable Development Goals.



Figure 2. 1. Sustainable Development Goals (UNESCO, 2015).

Goal 1: End poverty in all its forms everywhere,

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture,

Goal 3: Ensure healthy lives and promote well-being for all at all ages,

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all,

Goal 5: Achieve gender equality and empower all women and girls,

Goal 6: Ensure availability and sustainable management of water and sanitation for all,

Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all,

Goal 8: Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all,

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation,

Goal 10: Reduce inequality within and among countries,

Goal 11: Make cities and human settlements inclusive, safe, resilient, and sustainable,

Goal 12: Ensure sustainable consumption and production patterns,

Goal 13: Take urgent action to combat climate change and its impacts,

Goal 14: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development,

Goal 15: Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss,

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels,

Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development” (Prabuddh, 2018, p.3).

This embraces 17 Sustainable Development Goals (SDGs), and 169 targets, which aim to reduce poverty, improve public health, promote high-quality education for world citizens, and save the planet with responsible and sustainable actions in the following

15 years to be reached with the support of all countries (Chapman & O’Gorman, 2022; United Nations, 2015).

The 4th Sustainable Development Goal (SDG) seeks to guarantee inclusive and equitable quality education and to create lifelong learning occasions for everyone. Providing inclusive and high-quality education for everyone strengthens the notion that it is one of the most powerful and efficient means of long-term development. By 2030, all boys and girls will have received free primary and secondary education (UNESCO, 2015). This goal supports the idea of the SDGs being delivered through Environmental Education, following the motto "think globally, act locally." (Prabuddh, 2018, p. 9). Accordingly, one of the major goals of Environmental Education was increasing environmentally responsible behaviors (Hungerford & Volk, 1990).

Furthermore, one of the fundamental aims of environmental education seems to be to increase Environmental Literacy levels of people in order to help build in people an awareness of their environmental responsibilities to preserve and enhance the quality of the environment (Hollweg et al., 2011; NAAEE, 2010; Roth, 1992). In a nutshell, environmental education is essential in this century to develop environmentally literate learners with the knowledge, attitudes, values, and participation needed to address the world's environmental issues and raise environmental standards for both the present and future generations.

2.2. Conceptual Framework of Environmental Literacy

One of the most important objectives of Environmental Education is to promote environmental responsibility so that people may act to protect and enhance the quality of the environment (NAAEE, 2010; Roth, 1992). According to UNESCO/UNEP (1990), Environmental Education is important and absolutely necessary for raising children who are environmentally literate and who act responsibly toward the environment. Environmental Education's main goal is to develop environmentally literate people, according to an assessment of the relevant literature (Roth, 1992).

Environmental Literacy (EL) was first referenced with the question "How shall we identify the environmentally literate citizen?" in the 1970 National Environmental Education Act, which was written by the 37th president of the United States (McBride et al., 2013, p.7). As a result, someone who is environmentally literate is aware of the ongoing procedures and advances between nature, humans, and technology and understands how these systems are interconnected (Roth, 1992). Harvey (1977) expressed a person who is environmentally literate as "one who possesses basic skills, understandings, and feelings for man-environment relationship." (p.67). Environmental Literacy (EL) gained greater attention internationally and was included into Environmental Education at the same time Environmental Education (EE) started to grow as a result of the efforts outlined above.

Coyle (2005) advocated that two factors are necessary to develop Environmental Literacy. The first is the implementation of effective environmental education programs. The second is a more detailed approach to developing Environmental Literacy in society. Environmental Literacy is beyond raising awareness and includes developing in-depth knowledge, affective dispositions, environmentally responsible behaviors, and skills. Simmons (1995) was one of the first attempts of the Environmental Literacy model, produced within the scope of the North American Association for Environmental Education (NAAEE) project. Simmons' Environmental Literacy model integrated the sub-categories of affect, ecological knowledge, socio-political knowledge, knowledge of environmental issues, cognitive skills, environmentally responsible behaviors, and additional determinants of environmentally responsible behaviors mentioned in the environmental education objectives of the Belgrade Charter (1975), Tbilisi Conference (UNESCO, 1978), and Environmental Education Program prepared by Hungerford, Peyton & Wilk in 1980 (Köklü-Yaylacı & Feriver, 2020).

As the first component of Environmental Literacy, affect refers to a person's internal traits that enable them to exhibit carefully responsible actions with regard to environmental concerns and issues and to take action for a sustainable environment (Simmons, 1998). It plays a key role in how people connect with nature since it triggers innate responses before a cognitive process. Consequently, it may be asserted that

affective dispositions can exist without a significant amount of perceptual and cognitive processing (Zajonc, 2000). Similarly, Goldman et al. (2006) defined Environmental Literacy as “possessing the values, attitudes, and skills that enable knowledge to be converted into action.” (p. 5).

In response to Simmons' classification, scholars, environmental education facilities, and organizations later improved this framework of Environmental Literacy (McBride et al., 2013). Another framework was suggested by Dresner and Gill (1994) that takes environmental interest, motivation, and curiosity into account when proposing environmentally responsible behavior. According to Scott and Willits's study from 1994, there is a definite correlation between affective dispositions and environmentally responsible behaviors. The Environmental Literacy components were examined under four main categories and these components are environmental knowledge, affective dispositions toward the environment, environmentally responsible behaviors, and environmental skills (Chu et al., 2007; Curdt-Christiansen, 2021; Erdoğan et al., 2009; Hollweg et al., 2011; Klein et al., 2021; Volk & McBeth, 1997).

Obtaining the data required for environmental development and the development of the human system are some of the objectives of Environmental Literacy, according to Archie (2003). Other objectives include developing skills for increasing environmental awareness and understanding and educating people to encourage them to take responsibility for environmental decisions. People who are environmentally literate may be more aware of the occurrences and issues that affect both the social and natural environments (Pe'er et al., 2007).

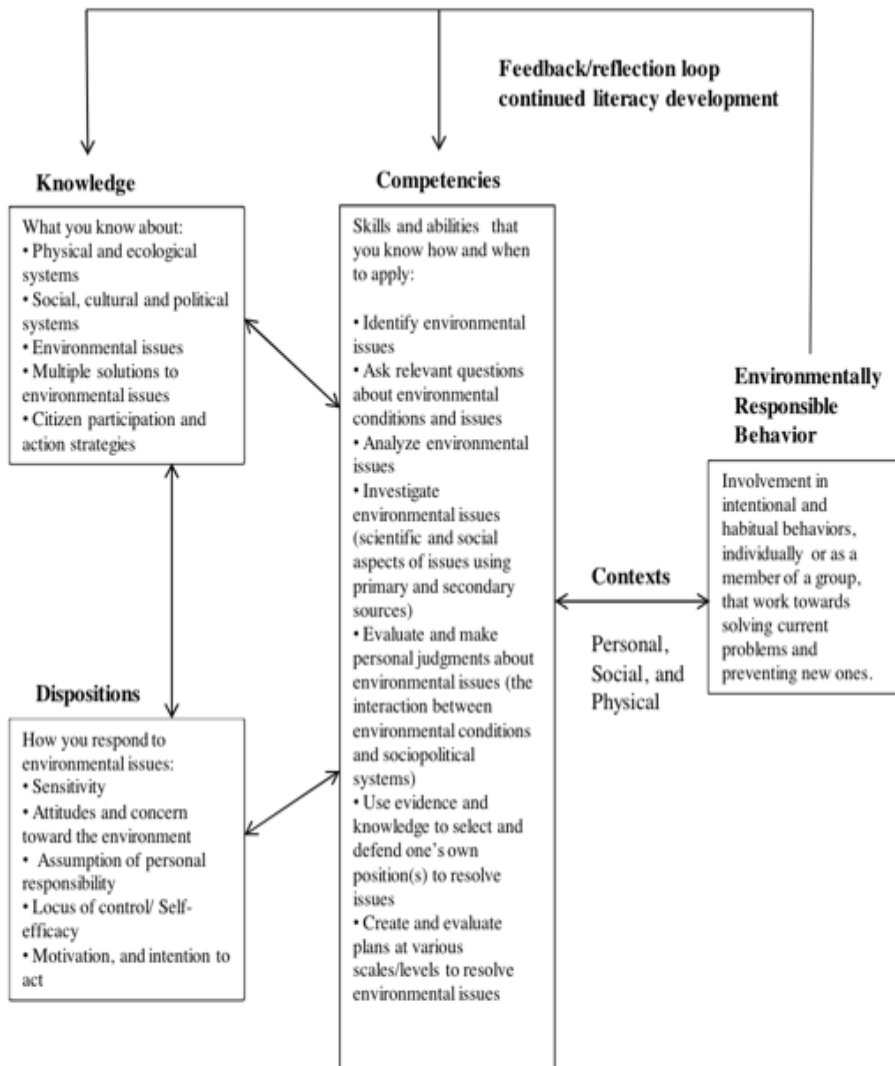


Figure 2. 2. The domain of Environmental Literacy (Hollweg et al., 2011, p. 3-2.)

According to the North American Association for Environmental Education [NAAEE] (2004), Environmental Literacy includes being aware of and concerned about environmental issues, learning about them, developing relevant skills, and being inspired to take action. The most recent framework for Environmental Literacy was created by the North American Association for Environmental Education (NAAEE), and it comprises environmental knowledge, affective dispositions toward the environment, environmental skills (competencies), and environmentally responsible behavior in personal, social, and physical contexts, as *Figure 2.1.* demonstrates (Hollweg et al., 2011).

Environmental knowledge is the first category with sub-categories of ecological knowledge, cultural, political, and socio-economic knowledge, and knowledge of environmental issues and problems (Hollweg et al., 2011; Marcinkowski, 2001). Ecological knowledge refers to knowledge of physical and ecological systems including living and non-living things in nature, their characteristics, the habitats of living things, the solar system, matter and energy cycle, food webs, geographical landforms, seasons, climate, nature events and natural history. Cultural, political, and socio-economic knowledge includes knowledge of cultural values and activities, geopolitical position, settlement, migration, environmental rights, public health, industry and working fields, transportation, technology, and development of technology. The last sub-category of knowledge about environmental issues and problems covers natural disasters, reduction in biodiversity, deforestation, poverty, pollution, global warming, and knowledge of environmental solution (McBride et al., 2013).

The second category of affective dispositions toward the environment refers to reflections on environmental problems/issues at the personal level (Chu et al., 2007). It covers appreciation of the environment, empathy with it, respect for it, positive and negative feelings about the environment, concern and curiosity about it, willingness to acting on environmental issues, intention to take personal responsibility for environmental issues, environmental locus of control, and environmental self-efficacy. Environmental appreciation refers to recognizing and caring about the environment (Hsu & Roth, 1998). People's views about the environment, including their ideas and worries about particular environmental issues, are referred to as positive and negative feelings. Environmental locus of control refers to a person's belief in his or her ability to change an environmental problem as a result of his or her behavior (McBride et al., 2013; Peyton & Miller, 1980). Locus of control refers to a person's belief in their ability to affect change on their own (Peyton & Miller, 1980). Environmental self-efficacy refers to a person's confidence in their ability to carry out behaviors required to produce an environmental solution (Wu & Mweemba, 2010).

It might be said that Environmental Literacy (EL) provides cognitive and affective domains for people to relate to their environment, with the affective domain including

values and attitudes toward environmental issues (McBride et al., 2013). Affective dispositions toward the environment might be examined by considering Simmons's (1995) Environmental Literacy model. According to this model, the first category of affect means to reflect on environmental issues at the personal level. Numerous research investigated parents, university students, and primary school students' perspectives on sustainable development (Aydın et al., 2013; Biasutti & Frate, 2017; Yılmaz, & Erkal, 2020). Moreover, it was shown that there was a significant relationship between affective dispositions toward the environment and age (Negev et al., 2008), gender (Chu et al., 2006), salary (Negev et al., 2008), education level of parents (Chu et al., 2006) and dwelling place (Fransson & Garling, 1999).

The third category is environmentally responsible behaviors. These include two sub-categories of resource management and production, and citizen participation. Resource management and production covers reducing natural resources use, using eco-friendly vehicles and materials, recycling the materials, working in agriculture, making compost, and reusing waste materials in creative ways. Citizen participation covers participating in voluntary activities in nature and parks, obeying the environmental rules, laws, and policies, and developing knowledge and competence in environmental issues (Hollweg et al., 2011; McBride et al., 2013). According to the Theory of Planned Behavior (Ajzen, 1985), environmentally responsible behavior is caused by some predictors, including knowledge, and affective dispositions from being aware to having self-efficacy.

The last category is related to environmental skills. Mostly, the ability to perform an action repeatedly while maintaining a certain standard of quality or accuracy is regarded as skill/competencies. According to Hollweg et al. (2011), environmental skills are categorized as skills that can be used and demonstrated in assessment and real-world settings for an environmental purpose. These skills include identifying the environmental problem, investigating it, analyzing the problem, proposing a solution, implementing the solution, and evaluating the solution (Hollweg et al., 2011).

2.3. Theory of Planned Behavior

Fishbein and Ajzen previously developed the Theory of Reasoned Action (TRA) in the field of social psychology in 1967, and they expanded this theory by adding perceived behavioral control (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975; Davis et al., 1989). Its name has changed to the Theory of Planned Behavior (Ajzen, 1991; Ajzen & Fishbein, 1980). According to Bamberg (1996), The Planned Behavior Theory is the most commonly used social psychological theory that has been confirmed in a wide range of empirical fields to predict and explain the behavior patterns of adults and children (Elliott & Ainsworth, 2012). Many studies in existing literature are related to the Theory of Planned Behavior. For example, the dental brushing behavior among preschool children (Soltani et al., 2018) and physical activity behaviors of young children (Mummery et al., 2000) were examined under the light of the Theory of Planned Behavior.

The studies related to Theory of Planned Behavior and environmentally responsible behaviors focused on the intentions of people and predictors of behaviors while buying organic products, picking-up litter, conserving natural resources such as water, and acting on environmental issues (Abrahamse & Steg, 2011; Chen & Tung, 2010; Richetin et al., 2012; Wan et al., 2014). Furthermore, a study conducted with primary school students revealed that Environmental Education programs enhance the emergence of an environmentally literate generation and lead to the desired goals of environmentally responsible behaviors with respect to the Theory of Planned Behavior (Wong et al., 2018). To be more precise, individuals with a high level of Environmental Literacy are willing to take action to support the well-being of the others, society, and the environment, and they are more likely to participate in sustainable development (Hollweg et al., 2011). In the present study, a framework of Environmental Literacy was generated in the light of the existing literature.

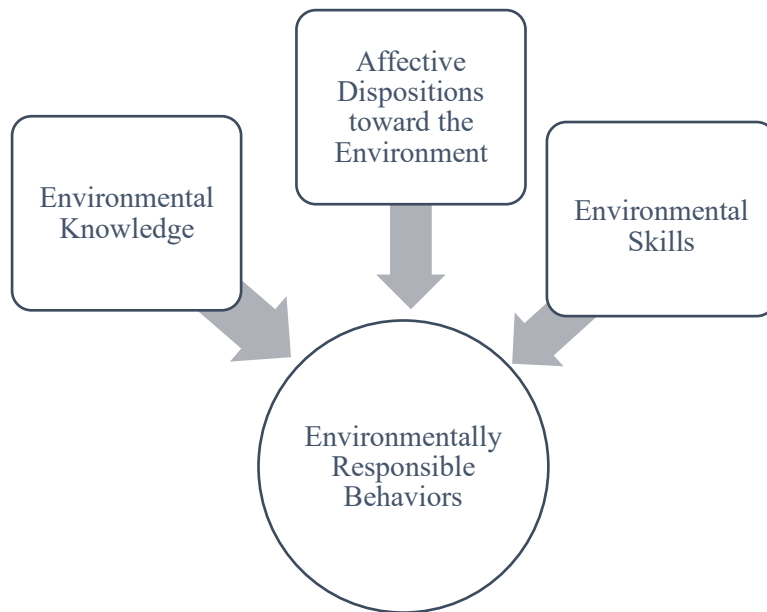


Figure 2. 3. The generated framework of Environmental Literacy

2.4. Early Childhood Environmental Education (EECE) Worldwide

Early infancy is a crucial time for development and learning, and prior studies have underlined the importance of Environmental Education at this time (Davis, 1998; Wilson, 2010). The effects of early childhood education on children's cognitive, linguistic, and social and emotional development have been identified (Camilli et al., 2010; Mashburn et al., 2008). The National Association for the Education of Young Children (NAEYC), in particular, released a statement in 1996 outlining the importance of the early years for a child's overall development and learning as well as the potential role early childhood educators may play in guiding and facilitating this period (NAEYC, 1996). As a result, children can be supported within the developmental domains via efficient early childhood education programs.

There are several perspectives on how children learn (Adelman, 2000; Essa, 2003). Constructivist learning theory was developed by Piaget to explain how children learn. Children may therefore learn well through active, hands-on inquiries (Essa, 2003). John Dewey also stressed the importance and influence of early encounters and learning via experience (Dewey, 1938). Froebel and Pestalozzi stressed the significance of the setting that allows children to learn from their own experiences by

following their needs and interests when it comes to children's first-hand experiences (Adelman, 2000). The learning that was based on children's interest and curiosities was also emphasized by the Reggio Emilia Approach. Vygotsky focused on the role that the relationship between children and adults plays in enabling and increasing children's learning in addition to active engagement (Zaretskii, 2009).

The United Nations' (UN) top priority, Environmental Education (EE), was a focus of the Education for Sustainable Development (ESD) plan, which also stressed the value of education in the early years (UNESCO, 2005). After that, the United Nations and Gothenburg Recommendations (2007) stated that incorporating the early years into educational programs is crucial for achieving Education for Sustainable Development (ESD). This is done by incorporating the environmental three pillars of economy, society, and environment (Davis et al., 2009; Hedefalk et al., 2014). Early Childhood Education (ECE) has become a crucial component of ESD as a result of these initiatives. ESD is growing more widespread every day as a result of collaboration between UN-affiliated organizations like IEEP and UNESCO and OECD-based groups like Environment and School Initiatives (ENSI). Eco-schools have been started and grown all around the world as a result of the work done by ENSI and UNESCO.

Similar the aims of Environmental Education, Roth (1992) explained Environmental Literacy development, and it claimed that environmental awareness, environmental concern and environmental understanding that can lead to environmental action (McBride, 2013). The four-stage learning cycle put out by David Kolb in 1984 is based on the premise that learning starts with real experience and has origins in the theories of Dewey and Piaget. According to the learning cycle developed by Kolb, the learner proceeds through four stages for learning to be complete: tangible experience, reflective observation, abstract hypotheses, and ultimately active testing of abstractions (Kolb, 1984). As a result, acquiring all components of Environmental Literacy takes place gradually across many phases. Both Roth's and Kolb's phases begin with actual experiences, advance understanding and knowledge, and reach a point when the learner puts new knowledge into practice by acting (Blanchard & Buchanan, 2011). *Figure 2.4* shows how Roth's stages of Environmental Literacy and Kolb's learning cycle align.

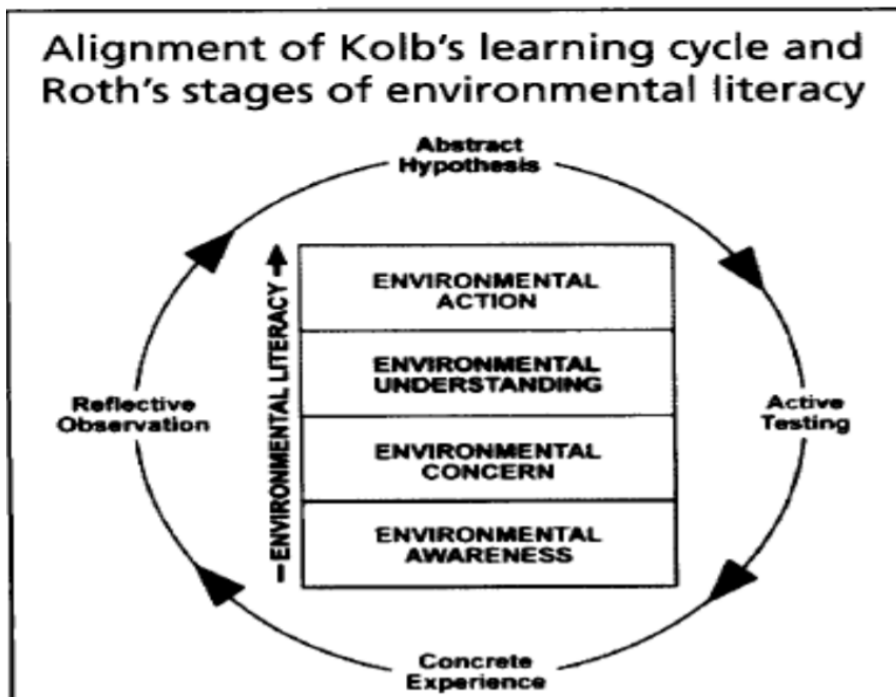


Figure 2. 4. Kolb's learning cycle and Roth's stages of Environmental Literacy (Blanchard & Buchanan, 2011, p.233).

The majority of the research emphasizes that early information, attitudes, and actions are established permanently (Davis et al., 2008; Madden & Liang, 2017). In reality, an empirical study has demonstrated that young children are more sensitive, engaged, and willing to participate in environmental education than older adults (Lieflander & Bogner, 2014). According to Piaget's theory of cognitive development (1977), children are in the preoperational term from 2 years to 7 years old. It is thought that this creates difficulty in understanding abstract concepts for children. For example, in one study, it was observed that children aged 4-6 years associate the concept of going green only with the color green, and the children did not mention concepts such as trees and the environment (Honig & Mennerich, 2013). On the other hand, environmental education (EE) in early childhood can help children to acquire awareness, sensitivity, motivation, critical thinking abilities, and sustainable behaviors through developmentally appropriate, child-centered, inquiry-based activities with tangible objects such as picture storybooks that a part of children's literature.

2.5. Picture Storybooks

2.5.1. General Characteristics of Picture Storybooks

Children's literature encompasses appropriate works written in prose or poetry and published for children from infancy to adolescence, whether they are fiction or nonfiction (Lynch-Brown & Tomlinson, 1999; Oguzkan, 2000). Children's literature fosters fluent speech, perception, and awareness of socio-emotional, cultural, and environmental issues, all of which are important for language development and the emergence of literacy in young readers (Gönen & Vezirolu, 2013). Children's literature may also help young children's cognitive development by giving them the chance to observe, compare, contrast, classify, and analyze things, as well as by promoting socioemotional growth by imparting messages of empathy, sensitivity, and a love of the environment (Hart, 2002; Sever, 2008).

Picture storybooks are a wonderful representation of children's literature for young children since they are particularly suited for them and cover subjects that they are interested in. A particular kind of children's literature called a picture storybook features characters and a plot that is presented through text and illustrations (Russell, 2001). They captivate with their gorgeous pictures and straightforward narrative. Character, place, style, plot, conflict, and theme are all elements of fiction that combined effort to create a story (Lynch-Brown & Tomlinson, 1999).

Children's book illustrations are distinct literary pieces that stand alone in their own right. Young children are able to describe and examine what they see by examining how things are made in terms of color, shade and brightness, figure arrangement, patterns of linearity, or large-scale (Gamble & Yates, 2008). They also help readers understand additional meanings of the story by complementing the text by completing the reading process and extending it (Sever, 2008). While words might be used to name individuals and reveal what they are thinking or saying, images could show the physical traits of characters, reveal their emotions through body language, and depict the environment in which the action takes place (Gamble & Yates, 2008).

2.5.2. Picture Storybooks to Promote Environmental Literacy

The daily routine of an early childhood setting may include children's literature, and storytelling sessions with appropriate image storybooks may be a strategy to foster environmental awareness (Bradbery, 2013). In light of this idea, picture storybooks can be effective tools for helping children develop emotional behaviors connected to Environmental Literacy (EL). Children's picture storybooks also have illustrations that may be seen, which is another great technique to address environmental themes. More specifically, it was discovered in a research by Cohen and Horm-Wingerd (1993) that young children may successfully develop consciousness through illustrations that highlight environmental issues.

Russell (2001) asserts that parents and teachers play a significant part in ensuring that children grow up in a rich environment that promotes language development and environmental awareness. Picture storybooks are excellent resources for offering various narratives and illustrations them in an engaging and instructive manner. Thus, while exposing children to cultural elements and societal norms, their cognitive and socioemotional development may be encouraged at the same time (Sever, 2008). Children may develop their own thoughts, acquire more general attitudes, and envision the link between individuals, society, and environment by being exposed to well-designed picture books (Bradbery, 2013; Wason-Ellam, 2010). It could be concluded that children's literature may be beneficial to increase awareness, sensitivity, positive feelings, motivation to act on environmental issues, since picture storybooks are easily accessible within early childhood education settings (Shine, 1995), and picture storybooks have messages about human social, cultural, and economic activities with text and illustrations (Spearman & Eckhoff, 2012; Wason-Ellam, 2010). "A sense of wonder and joy in nature should be at the very center of ecological literacy." (Louv, 2013, p.203). With this aim, picture storybooks might be effective materials to facilitate children's gaining affective dispositions related to Environmental Literacy (EL). Moreover, research conducted on children's literature in Turkey shows that affective dispositions, which are an important indicator of environmentally responsible behaviors, were rarely represented in children's literature (Erdoğan et al., 2011).

Despite the fact that the environment has been the subject of numerous works, it should be noted that this movement in children's literature is still relatively new (Spearman & Eckhoff, 2012). Environmental Literacy objectives can be effectively introduced in children's literature (EL). According to the study by Hsiao and Shih (2015), reading picture storybooks to children can help them learn about sustainability and environmental challenges. With twelve young children, ages five to six, the researchers utilized eight picture storybooks for Environmental Education. As a consequence of the study, it was argued that children learnt about protecting the environment and resources. The findings indicate that children may incorporate environmental issues while reviving their affective dispositions, such as appreciation, empathy, and positive feeling.

2.6. Previous Content Analysis Studies of Picture Storybooks

2.6.1. Content Analysis Studies Worldwide

Several studies were conducted to examine the potential application of picture books that might be related to the foundations of Environmental Literacy. Rule and Atkinson (1994) examined 30 picture books with an ecology topic in terms of the quality of the literary and visual components as well as the messages that were conveyed. According to reports, 9 of the picture books addressed issues related to land usage and overpopulation in addition to topics such as pollution, habitat loss, and overpopulation. Seven of the picture books discussed endangered species. Marriott's (2002) study, which examined how nature is presented in 1,074 picture books, 996 of which were picture storybooks and 78 of which were informational books, is renowned. The majority of books for young children misinform them about animals and their habitat, according to the findings. In fact, just 2% of the sample was found to be appropriate for Environmental Education. Similarly, the study conducted by Boudreaux (2006) investigated the goals of Environmental Education and portrayal of the environment were studied in 33 best-selling children's books for children aged 0 to 8 that were published in the United States in 2003. The study's findings showed that there was some evidence of human superiority to nature. Furthermore, in light of the objectives of Environmental Education, those texts were insufficient.

In addition to these investigations, other content analyses studies about the perception of social class have another important observation in this area. In order to describe how poverty is shown, Dedeoglu et al. (2011) studied 15 international children's books. The findings showed that child labor, inadequate living conditions, inadequate access to clothing and transportation, bartering, a lack of educational possibilities, and homelessness were all indicators of poverty. Additionally, Forest (2014) examined socioeconomic class reflections in 42 picture storybooks that received the Newbery Medal and Honor awards between 2004 and 2013. The study's findings show that there were 31 attributions to the upper class, middle class, working class, and poverty groups. In comparison to positive attributions, upper class was more adversely represented among them, whereas middle class was more favorably reflected. Positive and negative perceptions of the working class and the impoverished were mixed. In actuality, both positive and negative perceptions about every socioeconomic class were present.

Williams et al. (2012) investigated how the environment was portrayed in picture books and whether this representation has changed over time by examining 296 award-winning picture books that were released between 1938 and 2008. The results showed that there is a shift in the portrayal of the environment from the natural environment to the built environment, as well as a decrease in the representation of human-environment interaction. It was claimed that the development of industry and technology was affected by the messages in picture storybooks.

An examination of these studies indicate that the subjects covered in linked literature included environmental knowledge on natural systems, development in technology and environmental challenges like poverty, developments in technology, social and cultural diversity, and human-environment interactions. According to the studies cited above, international picture books have a great deal of promise for promoting Environmental Literacy.

2.6.2. Content Analysis Studies from Turkey

In terms of Environmental Literacy, content analysis studies carried out in Turkey are similar to those accessible globally. When the subject order of the picture storybooks published in Turkey between 1970-1993 was examined, it was determined that environmental issues were the second most discussed topic (Uzmen 1993). After the 90s, the number of books on environmental issues has increased (Kuzu, 2007). Gönen and Güler (2011) investigated 80 picture storybooks published in the period 1995-2010. Included picture storybooks were published for 2-12-year-old children. According to findings of the study, almost all of them present environmental awareness.

In terms of four components of Environmental Literacy in children's literature, Erdoğan et al., (2011) analyzed 63 of 100 basic literary books recommended by the Ministry of National Education for elementary and secondary school children. The findings showed that most books present environmental awareness and geographical patterns like morning-night, seasons, and climate. Moreover, books presented the aspect of affect and environmentally responsible behaviors less. However, environmental skills were not given in the texts of these books.

In terms of children's rights, 21 books from the 100 basic literary books suggested by MoNE were examined by Karaman-Kepenekçi (2010). Books were investigated under the survival, development, protection, and participation rights. The findings showed that there were both negative and positive instances of remarks about children's rights, with a minor difference in favor of positive examples. Positive remarks were generally noted to be more frequently associated to rights to survival, development, and involvement than negative statements, although more negative expressions were noticed in regard to rights to protection. Similarly, Büyükalan-Filiz and Harmankaya (2019) investigated 75 award-winning picture storybooks concerning children's rights. According to the findings, survival rights were mostly represented, while development, involvement and protection rights were mentioned less in picture storybooks.

Alan (2015) investigated 598 picture storybooks published for 4-6-year-old children. In terms of 7R including reduce, reuse, respect, rethink, reflect, recycle, redistribute. Findings of this study revealed 70.7% of picture storybooks present a sustainable action in terms of environmental, socio-cultural, and economic pillars. Çabuk et al. (2017) investigated the natural environmental messages in picture storybooks for preschool children through the texts and illustrations. They found that the examined 58 picture storybooks mostly present positive natural environmental messages in terms of living things like plants and animals. For example, “We must be aware of the habitats of animals.” (Çabuk et al., 2017, p. 14). A few picture storybooks gave negative perceptions to children. To illustrate, “We can harm plants anytime we want.” (Çabuk et al., 2017, p.14.). Güzelyurt and Özkan (2019) examined 50 illustrated children’s books in terms of Environmental Education. They found content related to loving nature and environmental knowledge about living things, the water cycle, and solar system. However, they concluded that children’s books are insufficient to explain the reasons for environmental problems and their solutions. Last but not least, Yigit-Gencen & Gultekin (2022) investigated nature-based reading and writing instructions in terms of in early childhood settings via a picture storybook, *The Giving Tree* (2014), by Shel Silverstein. They suggested nature-based reading and writing instructions can be implemented more by using picture storybooks in early childhood classrooms in order to enhance children’s Environmental Literacy and nature-based education.

As the aforementioned studies demonstrated, there are limited empirical studies conducted in Turkey regarding the Environmental Literacy components in picture storybooks for children. These studies are inadequate to present environmentally responsible behaviors and environmental skills, although most of the picture storybooks offer environmental knowledge, and help to raise the environmental awareness of children along with their appreciation of picture storybooks. Presenting all components of Environmental Literacy in picture storybooks might be helpful to reach the entire potential of children’s literature.

CHAPTER 3

METHODOLOGY

Here the design of the study is explained in the light of the research questions, and the population and sampling are described. After that, the instrumentation, data collection, and data analysis procedures during the pilot and main study are detailed. The ways of establishing the validity and reliability of the study are clarified, along with how ethical considerations throughout the study are addressed. Finally, the limitations of the present study are outlined, along with their rationale.

3.1. Design of the Study

The aim of this study is to investigate four main components of Environmental Literacy presented in picture storybooks for 48-72-month-old children published in 2010-2021. In further detail, a content analysis study was conducted to clarify the representations of environmental knowledge, affective dispositions towards the environment, environmentally responsible behaviors, and environmental skills in the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children. According to Fraenkel et al. (2019), content analysis is a qualitative inquiry to analyze the readily available texts and visuals that are an indirect way of human communication. Similarly, content analysis was defined as “a research technique for making replicable and valid inferences from texts” (Krippendorff, 2004, p.18) and “the systematic, objective, quantitative analysis of message characteristics” (Neuendorf, 2002, p.1). Hence, a content analysis study enables systematizing and quantifying the data (Fraenkel et al., 2019; Patton, 2002). The literature on Environmental Literacy was addressed deductively with the aim of the study and research questions. Then, a codebook was generated by including Environmental Literacy components to examine

the picture storybooks for 48-72-month-old children. The present study endeavored to answer the following research questions:

1- What are the descriptive characteristics (year of publication, translation status, publisher, awarded with a literary prize or not) of picture storybooks for 48-72-month-old children?

2- To what extent are the Environmental Literacy components presented in picture storybooks for 48-72-month-old children?

a) What is the variation of the environmental knowledge presented in the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children?

b) What is the variation of affective dispositions towards the environment presented in the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children?

c) What is the variation of the environmentally responsible behaviors presented in the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children?

d) What is the variation of the environmental skills presented in the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children?

3- What is the distribution of Environmental Literacy presented in picture storybooks for 48-72-month-old children according to the year of publication and translation status?

3.2. Population and Sampling

3.2.1. Characteristics of Target Population

Fraenkel et al. (2019) point out that the intended population is rarely found to draw general conclusions. The present study was designed by the purposive sampling method to reach the target population. Purposive sampling enabled a selection of a

specific population based on the aim of the study (Fraenkel et al., 2019; Krippendorff, 2004). Picture storybooks for 48-72-month-old in Çankaya, Ankara, were the target population of the study sample. The researcher aimed to reach the largest population of picture storybooks for 48-72-month-old children. Therefore, the researcher conducted the present study in a public children's library in the Çankaya district. It was centered in Ankara, which is the capital of Turkey. Many childcare centers, kindergartens, schools, universities, state institutions, and ministries are located in Çankaya, as well as public libraries (Yılmaz, 2014). Public libraries provide a variety of books, magazines, and publications for children without any charge (Gönen et al., 2015; Niklas et al., 2016; Ptacek, 2016). The researcher made a search of public children's libraries in Ankara, Çankaya. Then, these libraries were visited. After the exploration, Nasreddin Hoca Children's Library, located in the Presidential National Library, was selected for the study as it had the most extensive collection of picture storybooks for 48-to-72-month-old children.

Three inclusion criteria were determined to specify the target population of the present study. The fiction and non-fiction picture storybooks published in Turkish were examined according to the first criteria of the study. Both those originally written in Turkish and translated picture storybooks were included in the present study. Second, picture storybooks published between 2010 and 2021 were included in the study. Lastly, the picture storybooks targeting 48-72-month-old children were investigated in the light of previous studies on Environmental Education (Alan, 2015; Bradbery, 2013; Davis, 2010; Hsiao & Shih, 2015; Spearman & Eckhoff, 2012). The eligibility of picture storybooks for 48-72-month-old children was determined by investigating the cover picture, title, plot, and illustrations. Picture storybooks with more than one narrative and missing pages were excluded from the study as exclusion criteria.

3.2.2. Information about the Library

The Nasreddin Hoca Children's Library was established in the Presidential National Library building in February 2020, Çankaya, Ankara. It has a 1061 m² floor area with a seating capacity of 197 children. There are 25,000 books in the collection of the Nasreddin Hoca Children's Library (Presidential National Library, 2020). The library

was designed and equipped primarily for young children with child-sized tables, chairs, and shelves, as shown in *Figure 3.1*.



Figure 3. 1. The first photograph from the Nasreddin Hoca Children's Library was taken by researcher

The Nasreddin Hoca Children's Library is a depository library with no borrowing system. It has an open shelf system, so it is only possible to examine the books inside the library. The collection is organized according to the Dewey Decimal Classification System (Presidential National Library, 2020), developed by Melvil Dewey in 1873, which remains the most widely used library classification scheme (Satija, 2013). According to this system, the shelves of other parts of the library are labeled with categories such as geography, history, religion, and philosophy. However, there is no such classification in the children's library. The picture storybooks for 48-72-month-old children were placed on shelves without any classification. Although it is stated that it offers books for 5-10 years old on the library's website, it can be said that the library serves children from 6 months to 10 years in the light of the information given by the library staff and the observations of the researcher. Infants can also benefit from the services of the library as it displays picture storybooks for the age group of 0-10 in a varied and mixed way on the shelves (Figure 3.2).

Many children from Çankaya and other districts can visit the library with their families whenever they want or visit via field trips organized by public/private schools. During their visits, children find an opportunity to explore the books and activities, including reading or listening to books that are held in the library. Special days and weeks are

celebrated with children in the library. Furthermore, some librarians are experts in the early childhood education field. Even though researchers are permitted to conduct research in the library without permission, the picture storybooks were examined after receiving approval from the METU Human Subjects Ethics Committee. All photographs were taken with the permission of the library administration.



Figure 3. 2. The second photograph from the Nasreddin Hoca Children's Library was taken by researcher

3.2.3. Information about the Population

The descriptive characteristics of picture storybooks cover the year of publication, publisher, translation status, and receiving a literary award status. A total of 755 picture storybooks for 48-72-month-old children were included as a sample in the present study. The publication year of the picture storybooks varied from 2010 to 2021. Most of the picture storybooks were published in 2017 ($n=184$, 24.4%), while the least amount of books was published in 2020 ($n=15$, 2%). Picture storybooks were published by 134 different publisher companies. Most of the books were published by İş Bankası Kültür Publishing ($n=60$, 7.94%). 336 of them were originally written as Turkish picture storybooks (44.5%), while 419 of the sample (55.5%) were translated into Turkish ($n=419$, 55.5%) from other languages such as English, Russian, and Chinese. Twenty-nine of the picture storybooks (3.8%) had received a literary award.

3.3. Instrumentation

According to Neuendorf (2002), as part of the scientific method, instrumentation must be initiated prior to data collection. Due to the lack of comparable content analysis studies, instrumentation was created specifically for the purpose of this investigation of picture storybooks for 48-72-month-old children in terms of the presentation of Environmental Literacy. A codebook was produced with the related literature in three phases before the main study was conducted. Firstly, the components of Environmental Literacy were examined in the related literature, followed by research studies and their frameworks. Then, all components of Environmental Literacy were investigated in picture storybooks for 48-72-month-old children. Environmental knowledge, affective dispositions toward the environment, environmentally responsible behaviors, and environmental skills are the four components of Environmental Literacy (Chu et al., 2007; Curdt-Christiansen, 2020; Erdoğan & Marcinkowski, 2015; Hollweg et al., 2011; Kuswendi & Arga, 2020; McBride et al., 2013; Negev et al., 2008; Roth, 1992; Simmons, 1998). Secondly, the codebook was shared with four experts in the fields of early childhood education and environmental education. In the last phase, a pilot study was conducted. Each of these phases is described in detail below.

3.3.1. Coding and Categorizing

For a systematic approach, codifying is an integral part of collecting, categorizing, and analyzing the descriptive data set (DeCuir-Gunby et al., 2011). Codes are the accredited labels for any meaningful units in a content (Miles and Huberman, 1994), and codes and categories can be developed in theory-driven (deductive) or data-driven (inductive) ways in content analysis studies (Fraenkel et al., 2019; Krippendorff, 2004). The researcher deductively formed the codes and categories in the present study by reviewing the literature after determining the research questions (Saldana, 2021). A codebook was created to formalize the codes that emerged from previous studies and frameworks in the literature. Codebooks are essential to make the qualitative data part of a categorization system. As a result, the present study permits the data to be “segregated, grouped, regrouped and relinked in order to consolidate meaning and explanation prior to display” (Grbich, 2012, p.17). Macqueen et al. (1998) suggested that the codebook should include categories, sub-categories, item definitions, item

explanations, and examples according to inclusion/exclusion criteria (DeCuir-Gunby et al., 2010; Elo & Kyngas, 2008). The researcher generated the Environmental Literacy codebook based on the identified categories in the literature because no other study has previously investigated picture storybooks for 48-72-month-old children. As *Table 3.1.* demonstrates that the generated codebook for the present study includes the four components of Environmental Literacy.

Table 3. 1.

Sample Items from Environmental Literacy Framework Produced for the Present Study

Environmental Literacy		
Categories	Sub-Categories	Items
A. Environmental Knowledge	A.1. Ecological Knowledge	A.6. Knowledge of food chain.
	A.2. Cultural, Political, and Socio-Economic Knowledge	A.11. Knowledge of cultural values or activities.
	A.3. Knowledge of Environmental Issues and Problems	A.23. Knowledge of poverty.
B. Affective Dispositions toward the Environment		B.28 Empathy with the environment. B.36 Environmental locus of control.
C. Environmentally Responsible Behaviors	C.1. Resource Management and Production	C.41 Working in agriculture.
	C.2. Citizen Participation	C.46 Developing knowledge and competence in environmental issues.
D. Environmental Skills		D. 48 Skill of investigating the environmental problem D. 52 Skill of evaluating the environmental solution

According to Fraenkel et al. (2019), codebooks enable the researcher to prepare research questions that are relevant to the aims of the study. Following the categories

of the Environmental Literacy codebook, the demographic characteristics of the picture storybooks were examined. These characteristics are the publisher, publication year, translation status, and award-winning status. The units of a picture storybook for 48-72-month-old children were analyzed with respect to the title, cover picture, plot, and illustrations in terms of Environmental Literacy. The title, cover picture, and illustrations were investigated and coded into two categories: i) the relevant item was fully represented, and ii) the item was not represented. The plot of the picture storybooks was investigated with three categories: i) the item was fully represented, ii) the item was partially represented (the item is in the plot but is not emphasized in detail and prominently), and iii) the item was not represented.

After developing the codebook, four experts in early childhood education and the environmental education field were asked to ensure content-related validity. They checked the eligibility of the codebook from two perspectives. First, they checked the eligibility of the codebook structure according to the aim of the study. Second, they verified the eligibility of the English and Turkish translation versions. According to evaluations of experts, necessary revisions had been done to the codebook. The final version of the codebook has four categories, five sub-categories, fifty-two items, fifty-two item explanations, and examples (Appendix B).

3.3.2. Pilot Study

According to Schreier (2012), a pilot study should be conducted to allow the researcher to try out the instrument. Herewith, a pilot study was conducted with randomly selected 10 picture storybooks for 48-72-month-old children in the Nasreddin Hoca Children's Library (see Appendix C for the list of the included picture storybooks in the pilot study). The research was administered by a second coder who is studying in the METU Early Childhood Education Master's Program in order to assess the study's reliability (Fraenkel et al., 2019). The researcher provided a detailed explanation of the codebook before the coding process. As recommended by Schreier (2012), the two coders coded independently. The inter-coder agreement was calculated by using Miles and Huberman's formula (1994). Accordingly, an acceptable score for inter-coder agreement is expected to be at least 80% (Miles & Huberman, 1994; Patton, 2002).

The agreement between coders was found to be 95,96% in the present study. Then, the coding of the two coders was compared. The items which were coded differently by one were discussed with the other coder and negotiated on the same coding criteria such as i) fully represented, ii) was not represented, and iii) partially represented. The codebook should be clear to read, simple to follow, and easy to implement (DeCuir-Gunby et al., 2011). Therefore, pilot study allowed the researcher to become familiar with the method, instrument and coding process. After the codebook was finalized, the main data collection process was begun.

3.4. The Main Study

After the final version of the codebook was produced, the data collection process began in May 2022. In preparation for data collecting, the researcher visited the Nasreddin Hoca Children's Library and obtained information about the working hours of the library, the number of picture storybooks, and their categorization. Collecting data for the main study took three weeks. All picture storybooks in the children's library were systematically retrieved through shelf searching. Criteria-appropriate picture storybooks were examined using the Environmental Literacy codebook. Seven hundred fifty-five picture storybooks were included as a sample in the present study. Any picture storybooks containing two or more narratives and those with missing pages that disrupt the flow of the whole story or illustrations were excluded from the study. Each picture storybook was read twice before being coded. Each picture storybook took an average of seven minutes to read and code. All of the picture storybooks included in this study were subjected to the same set of circumstances in the same environment.

3.5. Data Analysis Procedure

The descriptive statistical method was used in the analysis of the data. In content analysis studies, the status of the pertinent data is typically presented together with the frequency or rate of the study's overall data (Fraenkel et al., 2019). The analyzed and evaluated content was analyzed with the IBM SPSS Statistics Program version 28. Results obtained from the study were reported as frequencies and percentages.

3.6. Validity and Reliability

Fraenkel et al. (2019) defined validity as “the appropriateness, correctness, meaningfulness, and usefulness of the specific inferences.” In other words, a study must convince that its results are correct (Krippendorff, 2004). The necessary arrangements were addressed to ensure validity, external validity, face validity, content validity, and reliability of the present study.

External validity is about drawing a generalization from the results (Fraenkel et al., 2019). The present study includes the analysis of 755 picture storybooks with purposive sampling in one public children’s library in Çankaya Ankara to reach the target population. In order to ensure face and content validity, the codebook and coding form was examined several times by the researcher and advisor. Beyond that, four experts in the fields of early childhood education and environmental education examined the codebook. According to their feedback, the codebook was changed and finalized. In this way, all components aimed to investigate were addressed via the instrument’s content and format (Fraenkel et al., 2019).

The reliability of the present study was measured with a second coder who is a graduate student in the Early Childhood Education Program at METU. Ten picture storybooks were selected and examined as a subsample. According to Schreier (2012), a percentage of .8 of the main sample is sufficient to be a subsample. The inter-coder reliability should be confirmed with at least 80% agreement (Creswell, 2013). In the present study, the coding of two researchers was calculated using Miles and Huberman’s formula (1994), and the agreement level was found as 95,96%.

3.7. Ethical Consideration

At each stage of the study, ethical issues were taken into consideration. The data collection process began for both the pilot and main study after acquiring the relevant approval from the Human Subjects Ethics Committee at Middle East Technical

University (see Appendix A for the Approval of the METU Human Subjects Ethics Committee).

3.8. Limitations of the Study

In the present study, representations of Environmental Literacy were examined in picture storybooks for 48-72-month-old children with respect to their title, plot, cover picture, and illustrations. A total of 755 picture storybooks were analyzed in the scope of the study. The sample was chosen by using a purposive sampling method. The first limitation is that the entire sample of picture storybooks was reached and examined in the Nasreddin Hoca Children's Library, located in Çankaya, Ankara. Therefore, drawing a generalization was limited to the picture storybooks reached in this library. The second limitation might be related to the objectivity of the present study; although a second coder was used in the pilot study, the data derived from the main study were coded and analyzed by the researcher.

CHAPTER 4

FINDINGS

This chapter reveals the results of the study in a comprehensive way. First, the descriptive characteristics of the sample are presented. Then, the findings obtained from the investigation of the title, plot, cover picture, and illustrations of picture storybooks for 48-72-month-old children were demonstrated with the guidance of the Environmental Literacy framework. Graphs and tables were used to present the findings of the study by addressing the research questions.

4.1. What are the Descriptive Characteristics (Year of Publication, Publisher, Translation Status, Awarded with a Literary Prize or Not) of Picture Storybooks for 48-72-month-old Children?

In the present study, a total of 755 picture storybooks for 48-72-month-old children were investigated. The list of the books that were chosen as a sample is provided in Appendix D. The descriptive characteristics of picture storybooks were examined according to the year of publication, publisher, translation status, and receiving a literary award. First of all, the year of publication of picture storybooks was analyzed.

In the scope of the study, the picture storybooks published in the years between 2010 and 2021 were examined. The results demonstrated that most of books were published in 2017 ($n=184$, 24.4%), 2018 ($n=143$, 18.9%), and 2016 ($n=111$, 14.7%) while the least amounts of books were published in 2011 ($n=20$, 2.6%), 2021 ($n=18$, 2.4%), and 2020 ($n=15$, 2%).

The distribution of the picture storybooks according to their year of publication can be seen in *Figure 4.1*.

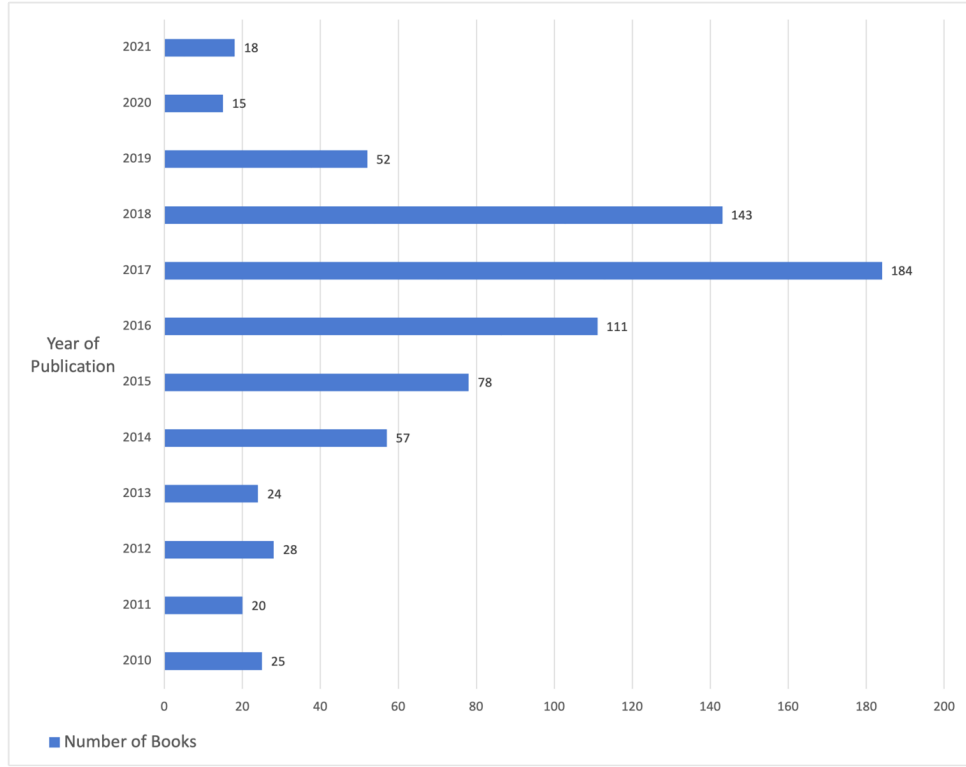


Figure 4. 1. Distribution of picture storybooks for 48-72-month-old children by year of publication

Seven hundred and fifty-five picture storybooks were published by 134 different publisher companies. Most of the books were published by İş Bankası Kültür Publishing ($n=60$, 7.94%), 1001 Çiçek Kitaplar Publishing ($n=52$, 6.88%), Yapı Kredi Publications ($n=41$, 5.4%) and Altın Kitaplar Publishing House ($n=26$, 3.44%). 419 of the sample (55.5%) were translated books, while 336 of them were originally written in Turkish (44.5%).

The distribution according to the translation status can be seen in *Figure 4.2*.

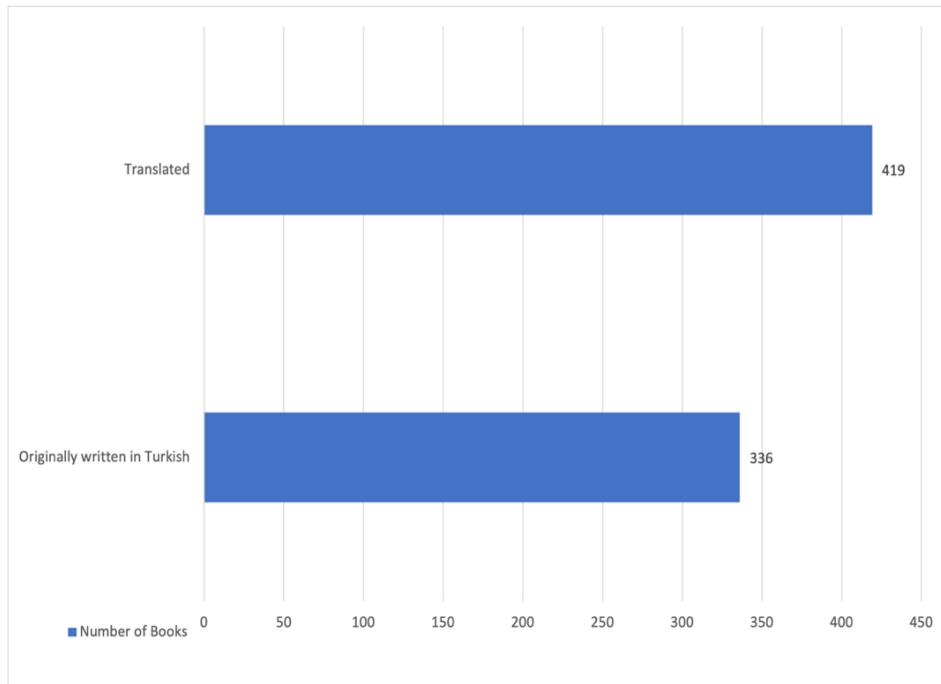


Figure 4. 2. Distribution of picture storybooks by translation status

A few of the picture storybooks ($n=29$; 3.8%) were honored with one or more awards. These included the Austrian Children's and Youth Book Award, the Caldecott Medal, the Caldecott Honor, the New York Times Best Illustrated Children's Books, the American Library Association Notable Children's Book Award, the Scholastic Parent & Child's Top 100 Books for Children, The City of Vienna's Children's and Young People's Book Prize, the Bookstart Books, the School Library Journal Best Books, the Korean Culture and Art Commission Literary Works Selection, the New Horizons European Best Children's Book Award, the Waterstones Children's Book Prize, the Bologna Children's Book Fair-New Horizons Award, the Best Illustration Award at Bologna Children's Book Fair, and the Nestle Smarties Book Prize-Gold Award.

The distribution of award-winning picture storybooks is displayed in *Figure 4.3*.

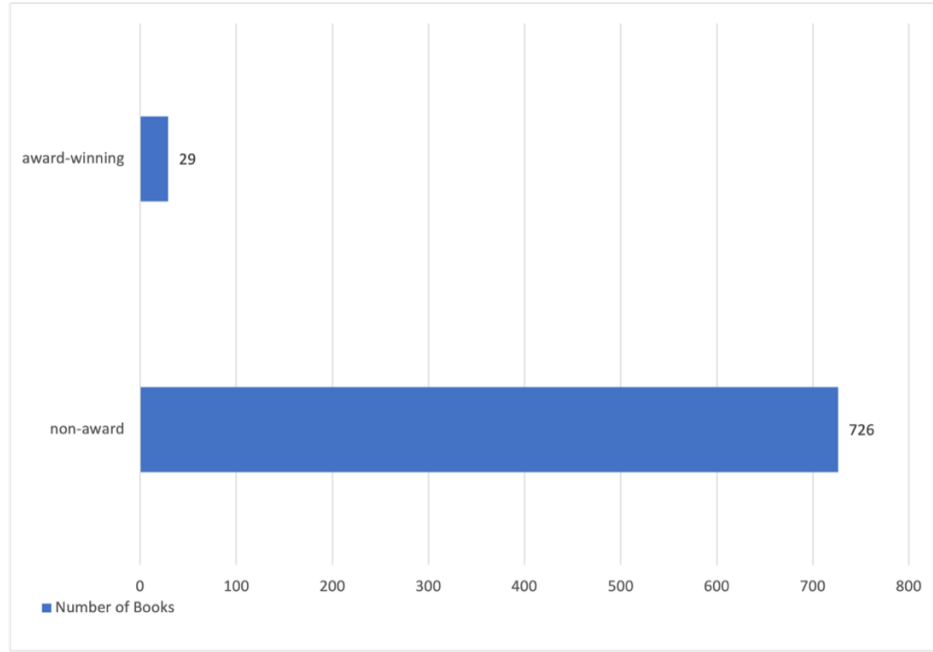


Figure 4. 3. Distribution of picture storybooks by award-winning status

Twenty-nine award-winning picture storybooks were published by eight different publishers. Most of them were published by METU Press ($n=20$, 68.9%) and published in 2017 ($n=9$, 31%). The other publishers of award-winning picture storybooks are Final Kültür Sanat Publications, Elma Publishing, Uçan Fil Publications, Koç University Press, İş Bankası Kültür Publishing, Eğiten Çocuk Publishing, and Sarıgaga Publishing. In addition, there were not any award-winning books originally written in Turkish. All 29 award-winning books were translated books (100%).

The distribution of award-winning picture storybooks by the publishers is displayed in *Figure 4.4*.

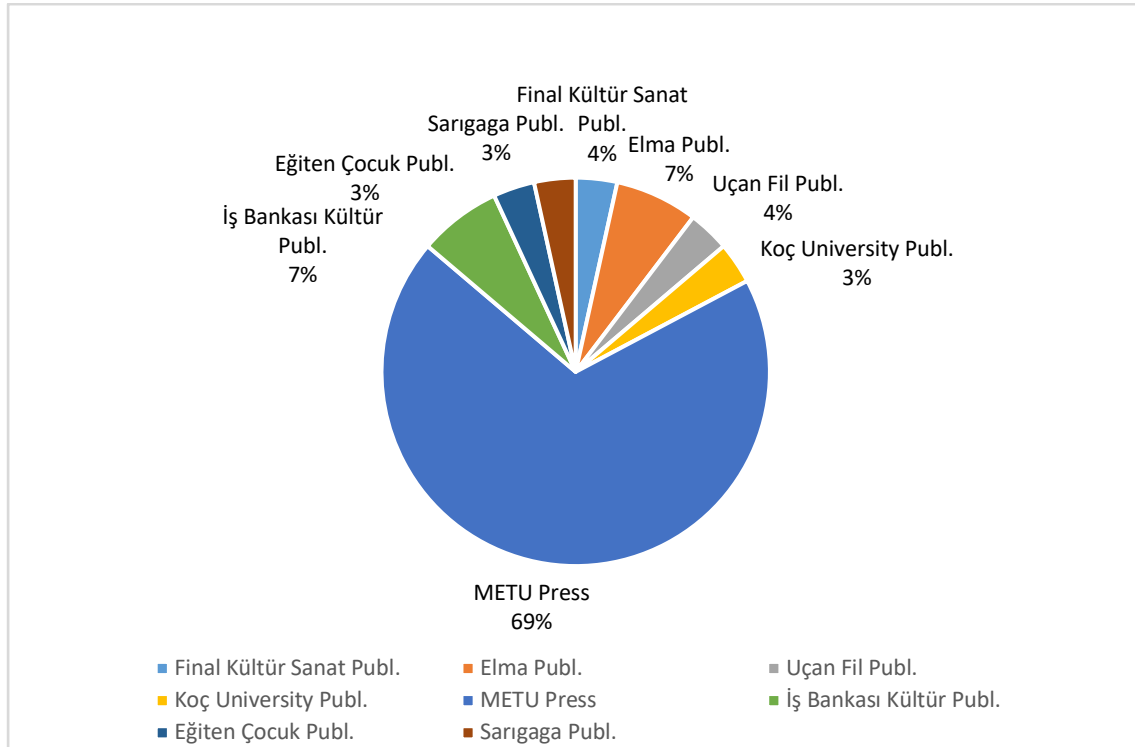


Figure 4. 4. Distribution of award-winning picture storybooks by publishers

4.2. To What Extent are the Environmental Literacy Components Presented in Picture Storybooks for 48-72-month-old Children?

The data derived from picture storybooks for 48-72-month-old children were analyzed and summarized based on the categories, sub-categories, and items in the Environmental Literacy framework. Findings are presented with respect to the items in Table 3.1. These items were investigated in the title, plot, cover picture, and illustrations of books chosen as the sample.

4.2.1. What is the Variation of the Environmental Knowledge Presented in the Title, Plot, Cover Picture, and Illustrations of Picture Storybooks for 48-72-month-old Children?

As *Table 4.1.* illustrates, the main category of environmental knowledge includes three sub-categories and twenty-six items. The sub-categories are ecological knowledge, cultural, political, socio-economic knowledge, and knowledge of environmental issues and problems were examined first in the title of the picture storybooks for 48-72-

month-old children. According to the findings, the items of *knowledge of biotics (living things) in nature* ($n=406$, 53.8%), *knowledge of characteristics of living things* ($n=73$, 9.7%), *knowledge of the solar system* ($n=55$, 7.4%), and *knowledge of habitat* ($n=43$, 5.7%) were represented most in the title of picture storybooks.

On the other hand, *knowledge of food chain* ($n=6$, 0.8%), *knowledge of environmental rights* ($n=6$, 0.8%), *knowledge of natural history* ($n=4$, 0.5%), *knowledge of geopolitical position* ($n=4$, 0.5%), and *knowledge of pollution* ($n=3$, 0.4%) were the least stated items under the environmental knowledge category in the title. The items represented once were the *knowledge of matter cycle* (0.1%), *knowledge of cultural values or activities* (0.1%), *knowledge of public health* (0.1%), *knowledge of natural disasters* (0.1%), *knowledge of deforestation* (0.1%), and *knowledge of global warming* (0.1%). However, there was no representation related to *knowledge of migration*, *knowledge of reduction in biodiversity*, *knowledge of poverty*, and *knowledge of environmental solutions* in the title.

Table 4. 1.

Distribution of Items of Environmental Knowledge with Respect to Title

Title	f^*	%*
A.Environmental Knowledge		
A.1. Ecological knowledge		
A.1.1. Knowledge of biotics (living things) in nature.	406	53.8
A.1.2. Knowledge of characteristics of living things.	73	9.7
A.1.3. Knowledge of abiotic factors and their characteristics.	18	2.4
A.1.4. Knowledge of the solar system.	55	7.4
A.1.5. Knowledge of habitat.	43	5.7
A.1.6. Knowledge of food chain.	6	0.8
A.1.7. Knowledge of matter cycle.	1	0.1
A.1.8. Knowledge of geographical landforms.	13	1.7
A.1.9. Knowledge of seasons, climate, and nature events.	24	3.2
A.1.10. Knowledge of natural history.	4	0.5

Table 4.1. (cont'd.)

A.2. Cultural, Political, and Socio-Economic Knowledge		
A.2.1. Knowledge of cultural values or activities.	1	0.1
A.2.2. Knowledge of geopolitical position.	4	0.5
A.2.3. Knowledge of settlement.	23	3.0
A.2.4. Knowledge of migration.	0	0.0
A.2.5. Knowledge of environmental rights.	6	0.8
A.2.6. Knowledge of public health.	1	0.1
A.2.7. Knowledge of industry and working fields.	18	2.4
A.2.8. Knowledge of transportation.	24	3.2
A.2.9. Knowledge of technology and development of technology.	11	1.5
A.3. Knowledge of Environmental Issues and Problems		
A.3.1. Knowledge of natural disasters.	1	0.1
A.3.2. Knowledge of reduction in biodiversity.	0	0.0
A.3.3. Knowledge of deforestation.	1	0.1
A.3.4. Knowledge of poverty.	0	0.0
A.3.5. Knowledge of pollution.	3	0.4
A.3.6. Knowledge of global warming.	1	0.1
A.3.7. Knowledge of environmental solutions.	0	0.0

*Represented

Examples from the Data Related to Environmental Knowledge in Title

Knowledge of biotics (living things) in nature and Knowledge of characteristics of living things: The Very Hungry Caterpillar (Aç Tırtıl) (Carle, 2010), Giant Rabbit (Dev Tavşan) (Göknıl, 2017), Dinosaurs (Dinozorlar) (Oxlade, 2017).

Knowledge of abiotic factors and their characteristics: What They Call Stone (Taş Dedikleri Var ya) (Purdie Salas, 2017).

Knowledge of solar system: The Yellow Sun Warming Our World (Dünyamızı Isıtan Sarı Güneş) (Anonymous, 2016), Moon, Star and Me (Ay, Yıldız ve Ben) (Yousefi, 2012).

Knowledge of habitat: Twenty Thousand Leagues Under the Sea (Deniz Altında Yirmi Bin Fersah) (Verne, 2018).

Knowledge of food chain: How Does the Mischievous Monkey Eat? (Afacan Maymun Nasıl Yemek Yer?) (Clarke & Birkett, 2016).

Knowledge of matter cycle: The Adventurous Journey of the Water Drop (Su Damlasının Macera Dolu Yolculuğu) (Seçmen, 2012).

Knowledge of global warming: Save Nature-Global Warming (Doğayı Korumak-Küresel Isınma) (Kaur, 2014).

Secondly, the plot of each book in the sample was analyzed for apparent and hidden representations of environmental knowledge. As *Table 4.2.* demonstrates that all items under the category of environmental knowledge were found to be represented in a clear way. The picture storybooks mostly mentioned items under ecological knowledge, cultural, political, and socio-economic knowledge, and knowledge of environmental issues and problems. The items of *knowledge of biotics (living things) in nature* ($n=726$, 96.2%), *knowledge of characteristics of living things* ($n=662$, 87.7%), *knowledge of habitat* ($n=482$, 63.8%), *knowledge of abiotic factors and their characteristics* ($n=479$, 63.4%), and *knowledge of the solar system* ($n=472$, 62.5%) were the most represented item in a clear way under the ecological knowledge sub-category. In the plot, *knowledge of poverty* ($n=10$, 1.3%), *knowledge of reduction in biodiversity* ($n=8$, 1.1%), and *knowledge of global warming* ($n=7$, 0.9%) were at least mentioned clearly.

On the contrary, *knowledge of environmental rights* ($n=20$, 2.6%) was most represented in a hidden way in the plot. Apart from that, *knowledge of food chain* ($n=7$, 0.9%), *knowledge of natural history* ($n=6$, 0.8%), *knowledge of industry and working fields* ($n=4$, 0.5%), *knowledge of matter cycle* ($n=3$, 0.4%), *knowledge of geopolitical position* ($n=3$, 0.4%), *knowledge of migration* ($n=3$, 0.4%), *knowledge of seasons, climate, and nature events* ($n=2$, 0.3%), *knowledge of technology and development of technology* ($n=2$, 0.3%), *knowledge of reduction in biodiversity* ($n=2$, 0.3%), *knowledge of deforestation* ($n=2$, 0.3%) are implicitly represented in the plot. The

knowledge of deforestation (0.1%), knowledge of pollution (0.1%), knowledge of global warming (0.1%), and knowledge of environmental solutions (0.1%) were implicitly represented only once in the plot.

Table 4. 2.

Distribution of Items of Environmental Knowledge with Respect to Plot

Plot	<i>f</i> Clear	% Clear	<i>f</i> Hidden	% Hidden
A.Environmental Knowledge				
A.1. Ecological knowledge				
A.1.1. Knowledge of biotics (living things) in nature.	726	96.2	0	0.0
A.1.2. Knowledge of characteristics of living things.	662	87.7	1	0.1
A.1.3. Knowledge of abiotic factors and their characteristics.	479	63.4	0	0.0
A.1.4. Knowledge of the solar system.	472	62.5	0	0.0
A.1.5. Knowledge of habitat.	482	63.8	0	0.0
A.1.6. Knowledge of food chain.	239	31.7	7	0.9
A.1.7. Knowledge of matter cycle.	13	1.7	3	0.4
A.1.8. Knowledge of geographical landforms.	301	39.9	0	0.0
A.1.9. Knowledge of seasons, climate, and nature events.	261	34.6	2	0.3
A.1.10. Knowledge of natural history.	56	7.4	6	0.8
A.2. Cultural, Political, and Socio-Economic Knowledge				
A.2.1. Knowledge of cultural values or activities.	24	3.2	0	0.0
A.2.2. Knowledge of geopolitical position.	57	7.5	3	0.4
A.2.3. Knowledge of settlement.	207	27.4	0	0.0
A.2.4. Knowledge of migration.	13	1.7	3	0.4
A.2.5. Knowledge of environmental rights.	12	1.6	20	2.6
A.2.6. Knowledge of public health.	19	2.5	0	0.0

Table 4.2 (cont'd.)

A.2.7. Knowledge of industry and working fields.	86	11.4	4	0.5
A.2.8. Knowledge of transportation.	156	20.7	0	0.0
A.2.9. Knowledge of technology and development of technology.	89	11.8	2	0.3
A.3. Knowledge of Environmental Issues and Problems				
A.3.1. Knowledge of natural disasters.	20	2.6	1	0.1
A.3.2. Knowledge of reduction in biodiversity.	8	1.1	2	0.3
A.3.3. Knowledge of deforestation.	12	1.6	2	0.3
A.3.4. Knowledge of poverty.	10	1.3	0	0.0
A.3.5. Knowledge of pollution.	25	3.3	1	0.1
A.3.6. Knowledge of global warming.	7	0.9	1	0.1
A.3.7. Knowledge of environmental solutions.	31	4.1	1	0.1

Examples from the Data Related to Environmental Knowledge in the Plot

Knowledge of environmental rights

Fully represented example: “It is my right to breathe clean air like the blue of the sky and the white of the glaciers.” (Serres, 2020, p.4).

Fully represented example: “I have the right to go to school without paying to learn how birds, airplanes, poppy seeds fly.” (Serres, 2020, p.9).

Partially represented example: “But once you start, you will love school. You will make new friends. And, you will play with new toys. You will read new books. You will swing on new swings.” (Penn, 2021, p.6).

Partially represented example: “Everybody says children should go to school.” (Pellai & Tamborini, 2019, p.2).

Knowledge of pollution

Fully represented example: “Even though dark gray gases cover the earth and pollute the seas, waste oils, I need more oil.” (Georgalou & Xadoulou, 2017, p.8.).

Partially represented example: “Containers fill with dusty, earthy liquid.” (Verde, 2019, p.25).

Knowledge of global warming

Fully represented example: “The unbearable heat was increasing day by day, drought was covering the whole earth. The waters were receding, the glaciers were melting, the living were thirsty.” (Georgalou & Xadoulou, 2017, p.10).

Partially represented example: “The sea of ice was melting. Polar Bear wondered, “Where did all the ice go?” (Preston-Gannon, 2018, p.1.).

Thirdly, the cover illustration of each storybook was examined for environmental knowledge. Items from the sub-category of ecological knowledge were seen to be displayed on the covers, as presented in *Table 4.3*. Items related to *knowledge of biotics (living things) in nature* ($n=727$, 96.3%), *knowledge of habitat* ($n=95$, 12.6%), and *knowledge of the solar system* ($n=76$, 10.1%) were the most represented. The presented items least related to *knowledge of food chain* ($n=20$, 2.6%), *knowledge of natural history* ($n=4$, 0.5%), and *knowledge of matter cycle* ($n=1$, 0.1%) were represented at least in cover pictures of books.

Under the sub-category of cultural, political, and socio-economic knowledge, *knowledge of industry and working fields* ($n=57$, 7.5%), *knowledge of settlement* ($n=36$, 4.8%), and *knowledge of transportation* ($n=13$, 1.7%) were the most represent item in cover pictures. The items of *knowledge of poverty* and *knowledge of global warming* were described by single titles only, and there was no representation related to *knowledge of migration*, *knowledge of technology*, and *development of technology* in the cover pictures.

In the last sub-category of environmental knowledge, which is knowledge of environmental issues and problems, the items *knowledge of poverty* ($n=1$, 0.1%) and *knowledge of global warming* ($n=1$, 0.1%) were represented once in cover pictures. There was no representation related to other items in the cover pictures.

Table 4. 3.

Distribution of Items of Environmental Knowledge with Respect to Cover Picture

Cover Picture	<i>f</i>	%
A.Environmental Knowledge		
A.1. Ecological knowledge		
A.1.1. Knowledge of biotics (living things) in nature.	727	96.3
A.1.2. Knowledge of characteristics of living things.	36	4.8
A.1.3. Knowledge of abiotic factors and their characteristics.	46	6.1
A.1.4. Knowledge of the solar system.	76	10.1
A.1.5. Knowledge of habitat.	95	12.6
A.1.6. Knowledge of food chain.	20	2.6
A.1.7. Knowledge of matter cycle.	1	0.1
A.1.8. Knowledge of geographical landforms.	63	8.3
A.1.9. Knowledge of seasons, climate, and nature events.	33	4.4
A.1.10. Knowledge of natural history.	4	0.5
A.2. Cultural, Political, and Socio-Economic Knowledge		
A.2.1. Knowledge of cultural values or activities.	1	0.1
A.2.2. Knowledge of geopolitical position.	3	0.4
A.2.3. Knowledge of settlement.	36	4.8
A.2.4. Knowledge of migration.	0	0.0
A.2.5. Knowledge of environmental rights.	1	0.1
A.2.6. Knowledge of public health.	9	1.2
A.2.7. Knowledge of industry and working fields.	57	7.5
A.2.8. Knowledge of transportation.	13	1.7
A.2.9. Knowledge of technology and development of technology.	0	0.0

Table 4.3 (cont'd.)

A.3. Knowledge of Environmental Issues and Problems		
A.3.1. Knowledge of natural disasters.	0	0.0
A.3.2. Knowledge of reduction in biodiversity.	0	0.0
A.3.3. Knowledge of deforestation.	0	0.0
A.3.4. Knowledge of poverty.	1	0.1
A.3.5. Knowledge of pollution.	0	0.0
A.3.6. Knowledge of global warming.	1	0.1
A.3.7. Knowledge of environmental solutions.	0	0.0

Examples from the Data Related to Environmental Knowledge in Cover Picture

Knowledge of abiotic factors and their characteristics representation example in the cover picture

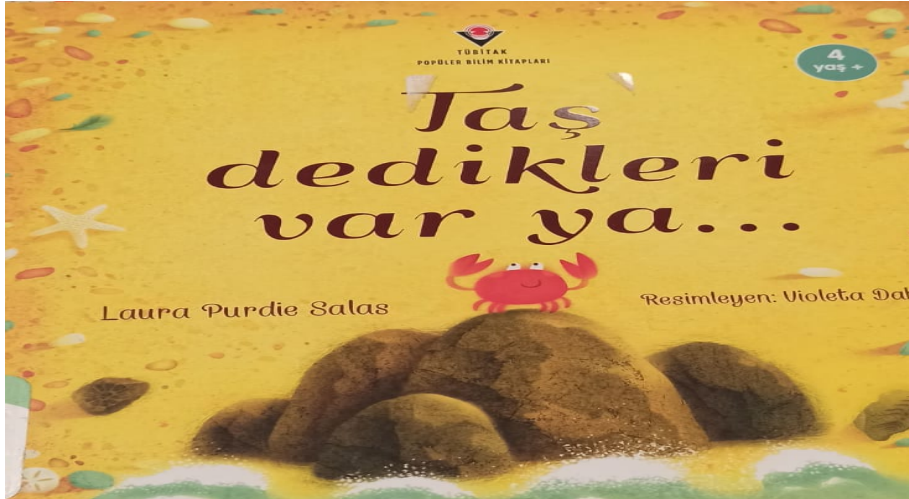


Figure 4. 5. Representation example of *knowledge of abiotic factors and their characteristics*, cover picture of *Taş dedikleri var ya* (What They Call Stone) (Purdie Salas, 2017).

Knowledge of the solar system representation example in the cover picture



Figure 4. 6. Representation example of *knowledge of the solar system*, the cover picture of *Dünyamızı ısıtan sarı güneş (The Yellow Sun Warming Our World)* (Anonymous, 2016).

Knowledge of biotics (living things) in nature, Knowledge of characteristics of living things, and Knowledge of food chain representation example in the cover picture



Figure 4. 7. Representation example of *knowledge of biotics (living things) in nature, knowledge of characteristics of living things, and knowledge of food chain*, the cover picture of *Afacan Maymun Nasıl Yemek Yer?* (How Does the Mischievous Monkey Eat?) (Clarke & Birkett, 2016).

Knowledge of global warming representation example in the cover picture



Figure 4. 8. Representation example of *knowledge of global warming*, the cover picture of *Doğayı Korumak-Küresel Isınma* (Save Nature-Global Warming) (Kaur, 2014).

Finally, the environmental knowledge category was investigated in the illustrations of the storybooks. Illustrations relating to the sub-category of ecological knowledge are listed in *Table 4.4*. Specifically, the item of *knowledge of biotics (living things) in nature* ($n=734$, 97.2%), *knowledge of characteristics of living things* ($n=610$, 80.8%), *knowledge of abiotic factors and their characteristics* ($n=505$, 66.9%), *knowledge of habitat* ($n=449$, 59.5%), *knowledge of the solar system* ($n=431$, 57.1%), and *knowledge of geographical landforms* ($n=306$, 40.5%) were the most represented items in illustrations. The items of *knowledge of reduction in biodiversity* ($n=2$, 0.3%), *knowledge of environmental rights* ($n=3$, 0.4%), and *knowledge of poverty* ($n=4$, 0.5%) were the least represented.

Under the second sub-category of environmental knowledge, the items of *knowledge of transportation* ($n=179$, 23.7%), *knowledge of settlement* ($n=162$, 21.5%), and *knowledge of technology and development of technology* ($n=83$, 1.0%) were the most represented item in illustrations. The items of *knowledge of environmental rights* ($n=3$, 0.4%), *knowledge of migration* ($n=6$, 0.8%), and *knowledge of public health* ($n=8$, 1.1%) were the least represented.

Under the last sub-category of environmental knowledge, the items of *knowledge of natural disasters* ($n=16$, 2.1%), *knowledge of pollution* ($n=11$, 1.5%), and *knowledge*

of deforestation ($n=10$, 1.3%) were the most represented items. In contrast, the item of knowledge of reduction in biodiversity ($n=2$, 0.3%) was defined the least in illustrations of books.

Table 4. 4.

Distribution of Items of Environmental Knowledge with Respect to Illustrations

Illustrations	<i>f</i>	%
A.Environmental Knowledge		
A.1. Ecological knowledge		
A.1.1. Knowledge of biotics (living things) in nature.	734	97.2
A.1.2. Knowledge of characteristics of living things.	610	80.8
A.1.3. Knowledge of abiotic factors and their characteristics.	505	66.9
A.1.4. Knowledge of the solar system.	431	57.1
A.1.5. Knowledge of habitat.	449	59.5
A.1.6. Knowledge of food chain.	160	21.2
A.1.7. Knowledge of matter cycle.	9	1.2
A.1.8. Knowledge of geographical landforms.	306	40.5
A.1.9. Knowledge of seasons, climate, and nature events.	221	29.3
A.1.10. Knowledge of natural history.	40	5.3
A.2. Cultural, Political, and Socio-Economic Knowledge		
A.2.1. Knowledge of cultural values or activities.	13	1.7
A.2.2. Knowledge of geopolitical position.	18	2.4
A.2.3. Knowledge of settlement.	162	21.5
A.2.4. Knowledge of migration.	6	0.8
A.2.5. Knowledge of environmental rights.	3	0.4
A.2.6. Knowledge of public health.	8	1.1
A.2.7. Knowledge of industry and working fields.	53	7.0
A.2.8. Knowledge of transportation.	179	23.7
A.2.9. Knowledge of technology and development of technology.	83	1.0

Table 4.4 (cont'd.)

A.3. Knowledge of Environmental Issues and Problems		
A.3.1. Knowledge of natural disasters.	16	2.1
A.3.2. Knowledge of reduction in biodiversity.	2	0.3
A.3.3. Knowledge of deforestation.	10	1.3
A.3.4. Knowledge of poverty.	4	0.5
A.3.5. Knowledge of pollution.	11	1.5
A.3.6. Knowledge of global warming.	4	0.5
A.3.7. Knowledge of environmental solutions.	5	0.7

Examples from the Data Related to Environmental Knowledge in Illustrations

Knowledge of food chain representation example in illustrations

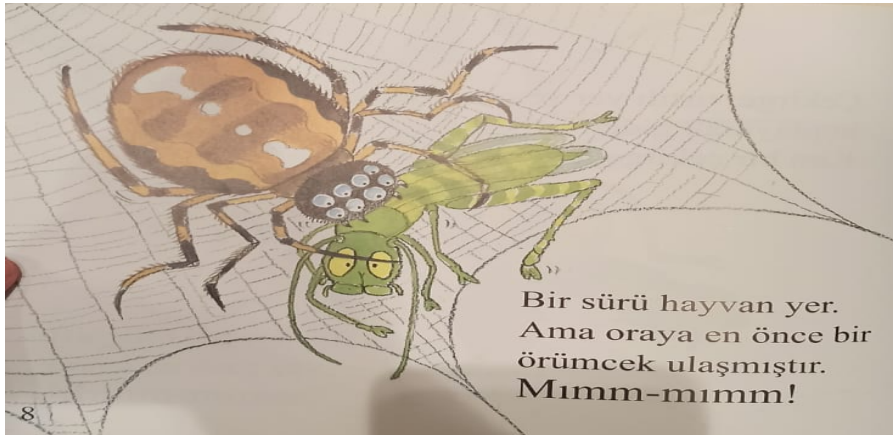


Figure 4. 9. Representation example of *knowledge of food chain*, the illustration of Mmm! Çok Lezzetli-Besin Zincirleri Hakkında Bir Kitap (Mmm! So Tasty-A Book About Food Chains) (Manning & Granström, 2017).

Knowledge of natural history representation example in illustrations

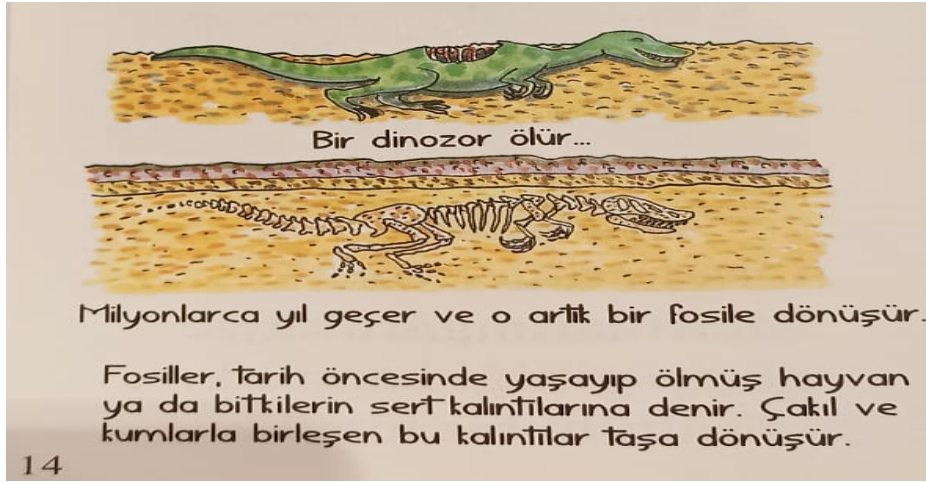


Figure 4. 10. Representation example of *knowledge of natural history*, the illustration of Dođayı Koru-Enerji Tasarrufu (Save Nature-Energy Saving) (Kaur, 2014).

Knowledge of natural disaster representation example in illustrations



Figure 4. 11. Representation example of *knowledge of natural disaster*, the illustration of Dinozor Çađı Çöl Maceraları (Dinosaur Age Desert Adventures) (Anonymous, 2017).

4.2.2. What is the Variation of the Affective Dispositions Toward the Environment Presented in the Title, Plot, Cover Picture, and Illustrations of Picture Storybooks for 48-72-month-old Children?

As *Table 4.5.* illustrates, the main category of affective dispositions toward the environment includes eleven items. The items were examined first in the title. According to the findings, the items of *positive feelings about the environment* ($n=12$, 1.6%) and *negative feelings about the environment* ($n=7$, 0.9%) were most represented in the titles of the picture storybooks. On the other hand, *appreciation of the environment* ($n=2$, 0.3%) was the least stated item under the affective dispositions towards environment category in the title. However, there was no representation related to the rest of the items associated with affective dispositions towards the environment in the titles of the picture storybooks.

Table 4. 5.

Distribution of Items of Affective Dispositions toward the Environment with Respect to Title

Title	<i>f</i>	%
B.Affective Dispositions toward the Environment		
B.1. Appreciation of the environment.	2	0.3
B.2. Empathy with the environment.	0	0.0
B.3. Respect for the environment.	0	0.0
B.4. Positive feeling about the environment.	12	1.6
B.5. Negative feeling about the environment.	7	0.9
B.6. Curiosity about the environment.	0	0.0
B.7. Concern about the environment.	0	0.0
B.8. Willingness to act on environmental issues.	0	0.0
B.9. Intention to take personal responsibility for environmental issues.	0	0.0
B.10. Environmental locus of control.	0	0.0
B.11. Environmental self-efficacy.	0	0.0

Examples from the Data Related to Affective Dispositions toward the Environment in Title

Positive feelings about the environment representation example in the title: The Most Beautiful Place in the World (Dünyanın En Güzel Yeri) (Jaafari, 2016), Elmer Snow Joy (Elmer Kay Keyfi) (Mckee,2016), Kind Hearted Little Rabbit (İyi Kalpli Küçük Tavşan) (Escoffier, 2019).

Negative feeling about the environment representation example in the title: Ah! It Wasn't Scary at All (Aaa! Hiç de Korkunç Değilmiş) (Francella, 2014), Matis Doesn't Like Mathematics (Matis Matematiği Sevmiyor) (Lafay & Boulanger, 2015), The Crocodile Who Doesn't Like Water (Suyu Sevmeyen Krokodil) (Merino, 2018).

Appreciation of the environment representation example in the title: Teddy Bear Says Thank You (Ayıcık Teşekkür Ediyor) (Dahl, 2018).

Secondly, the items related to affective dispositions toward the environment were examined in the plot. Clear and hidden representations of the items related to affective dispositions toward the environment were analyzed. As *Table 4.6.* demonstrates the plot of picture storybooks represents all items under the category of affective dispositions toward the environment clearly. Particularly, the items of *positive feelings about the environment* ($n=563$, 74.6%), *appreciation of the environment* ($n=333$, 44.1%), and *negative feelings about the environment* ($n=274$, 36.3%) were found among the most clearly represented items in the plot of these storybooks. The least clearly mentioned items in plot were *intention to take personal responsibility for environmental issues* ($n=43$, 5.7%), *environmental self-efficacy* ($n=33$, 4.4%), and *environmental locus of control* ($n=13$, 1.7%).

On the other hand, under the affective dispositions toward the environment category, *concern about the environment* (0.1%), *positive feeling about the environment* (0.1%), and *negative feeling about the environment* (0.1%) were implicitly stated in one picture storybook's plot. However, there was no hidden representation related to the affective dispositions toward the environment in the plot of the picture storybooks.

Table 4. 6.

Distribution of Items of Affective Dispositions towards Environment with Respect to Plot

Plot	<i>f</i> (Clear)	% (Clear)	<i>f</i> (Hidden)	% (Hidden)
B. Affective Dispositions towards Environment				
B.1. Appreciation of the environment.	333	44.1	0	0.0
B.2. Empathy with the environment.	110	14.6	0	0.0
B.3. Respect for the environment.	65	8.6	0	0.0
B.4. Positive feeling about the environment.	563	74.6	1	0.1
B.5. Negative feeling about the environment.	274	36.3	1	0.1
B.6. Curiosity about the environment.	131	17.4	0	0.0
B.7. Concern about the environment.	76	10.1	1	0.1
B.8. Willingness to act on environmental issues.	60	7.9	0	0.0
B.9. Intention to take personal responsibility for environmental issues.	43	5.7	0	0.0
B.10. Environmental locus of control.	13	1.7	0	0.0
B.11. Environmental self-efficacy.	33	4.4	0	0.0

Examples from the Data Related to Affective Dispositions toward the Environment in Plot

Positive feelings about the environment fully representation example in the plot: “The kind little rabbit dreamed of the beautiful forest where he lived. What a nice smell the Earth and the grass...” (Escoffier, 2019, p.9).

Negative feelings about the environment fully representation example in the plot: “This house was nothing like their old house. There was no garden at the front, no place to ride a bike. Also, there were no big trees on the side of the roads. The color of the sky was always gray, it was raining nonstop. She was unhappy. He missed walking on the big, wide streets. She missed the warm rays of the sun.” (Chien, 2016, p.2).

Appreciation of the environment fully representation example in the plot: “We need to know more about the world!” said Milly. There's a big world out there for us." (Shields, 2011, p.11).

Concern about the environment fully representation example in the plot: “Cikcik appeared before them and said worriedly to children with bows on their legs: What are you doing like this? You pierced the sky. Do you want to harm our world?” (Erer, 2015, p.3).

Concern about the environment partially representation example in the plot: “However, our world hasn't suffered at all because our friends have closed all the holes.” (Erer, 2015, p.4).

Thirdly, the affective dispositions toward the environment were investigated in the cover pictures of storybooks, as displayed in *Table 4.7*. The most represented items were *positive feelings about the environment* ($n=22, 2.9\%$) and *negative feelings about the environment* ($n=10, 1.3\%$). Those items mentioned only once were *appreciation of the environment, respect for the environment, curiosity about the environment, concern about the environment, willingness to act on environmental issues, and intention to take personal responsibility for environmental issues*. There was no example of *empathy with the environment, environmental locus of control, and environmental self-efficacy* in the cover pictures of books.

Table 4. 7.

Distribution of Items of Affective Dispositions towards Environment with Respect to Cover Picture

Cover Picture	<i>f</i>	%
B.Affective Dispositions toward the Environment		
B.1. Appreciation of the environment.	1	0.1
B.2. Empathy with the environment.	0	0.0
B.3. Respect for the environment.	1	0.1
B.4. Positive feeling about the environment.	22	2.9
B.5. Negative feeling about the environment.	10	1.3

Table 4.7 (cont'd.)

B.6. Curiosity about the environment.	1	0.1
B.7. Concern about the environment.	1	0.1
B.8. Willingness to act on environmental issues.	1	0.1
B.9. Intention to take personal responsibility for environmental issues.	1	0.0
B.10. Environmental locus of control.	0	0.0
B.11. Environmental self-efficacy.	0	0.0

Finally, the affective dispositions toward the environment category were investigated in the illustrations of storybooks, as displayed in *Table 4.8*. The most represented items were *positive feelings about the environment* ($n=323$, 42.8%), *negative feelings about the environment* ($n=136$, 8.0%), and *appreciation of the environment* ($n=46$, 6.1%) in illustrations. Environmental locus of control ($n=3$, 0.4%) and environmental self-efficacy ($n=2$, 0.3%) were the least illustrated items under the affective dispositions towards the environment category.

Table 4. 8.

Distribution of Items of Affective Dispositions towards Environment with Respect to Illustrations

Illustrations	<i>f</i>	%
B.Affective Dispositions toward the Environment		
B.1. Appreciation of the environment.	46	6.1
B.2. Empathy with the environment.	11	1.5
B.3. Respect for the environment.	11	1.5
B.4. Positive feeling about the environment.	323	42.8
B.5. Negative feeling about the environment.	136	8.0
B.6. Curiosity about the environment.	14	1.9
B.7. Concern about the environment.	11	1.5
B.8. Willingness to act on environmental issues.	6	0.8
B.9. Intention to take personal responsibility for environmental issues.	6	0.8
B.10. Environmental locus of control.	3	0.4
B.11. Environmental self-efficacy.	2	0.3

Examples from the Data Related to Affective Dispositions toward the Environment in Illustrations

Negative feelings about the environment representation example in illustrations:



Figure 4. 12. Representation example of *negative feelings about the environment* in illustrations of *Dinosaurs Came Out of the Seed I Planted (Ektiğim Tohumdan Dinozor Çıktı!)* (Hart & Eaves, 2018).

Environmental locus of control representation example in illustrations

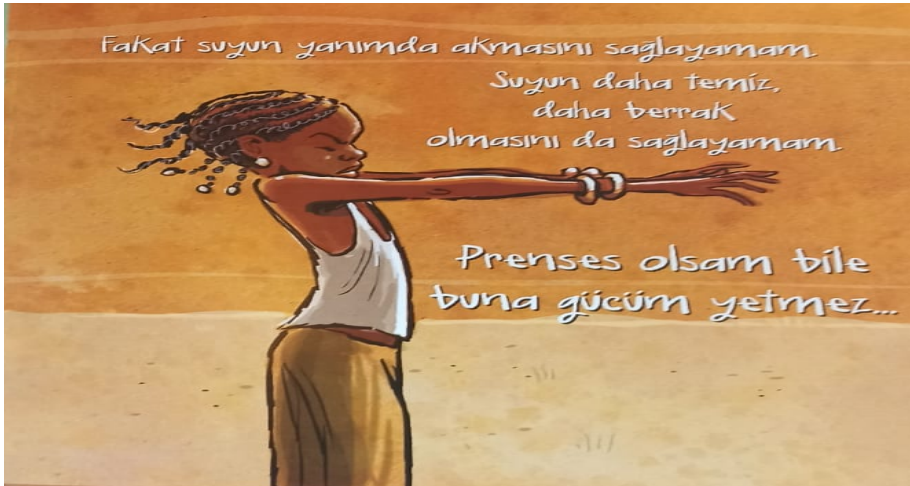


Figure 4. 13. Representation example of *environmental locus of control* in illustrations of *Water Princess (Su Prensesi)* (Verde, 2019).

4.2.3. What is the Variation of the Environmentally Responsible Behaviors Presented in the Title, Plot, Cover Picture, and Illustrations of Picture storybooks for 48-72-month-old Children?

As Table 4.9. illustrates, the main category of environmentally responsible behaviors includes two sub-categories and nine items. The sub-categories are resource management and production and citizen participation. The items for environmentally responsible behaviors were examined first in the title of the picture storybooks for 48-72-month-old children. According to the findings, the items of *working in agriculture* ($n=9$, 1.2%), *reducing natural resource use* ($n=2$, 0.3%), and *obeying the environmental rules, laws, and policies* ($n=2$, 0.3%) were most represented in the titles. On the other hand, *using eco-friendly vehicles and materials* and *participating in voluntary activities in nature and parks* were represented only once in the title, and none of the remaining items related to environmentally responsible behaviors appeared in the titles of the picture storybooks.

Table 4. 9.

Distribution of Items of Environmentally Responsible Behaviors with Respect to Title

Title	<i>f</i>	%
C. Environmentally Responsible Behaviors		
C.1.Resource Management and Production		
C.1.1. Reducing natural resource use.	2	0.3
C.1.2. Using eco-friendly vehicles and materials.	0	0.0
C.1.3. Recycling the materials.	1	0.1
C.1.4. Working in agriculture.	9	1.2
C.1.5. Making compost.	1	0.1
C.1.6. Reusing waste materials in creative ways.	0	0.0
C.2.Citizen Participation		
C.2.1. Participating in voluntary activities in nature and parks.	1	0.1
C.2.2. Obeying the environmental rules, laws, and policies.	2	0.3
C.2.3. Developing knowledge and competence in environmental issues.	0	0.0

Examples from the Data Related to Environmentally Responsible Behaviors in Title

Working in agriculture representation example in the title: (Emre and Cemre Working in Agriculture (Emre ile Cemre Tarım Yapıyor) (Sertbarut, 2017).

Making compost representation example in the title: Soso's Compost Book (Soso'nun Kompost Kitabı) (Özkan, 2018).

Reducing natural resource use representation example in the title: Save Nature-Energy Saving (Doğayı Koru- Enerji Tasarrufu) (Kaur, 2014).

Participating in voluntary activities in nature and parks representation example in the title:

I Play in The Park I Keep It Clean (Parkta Oynuyorum Temiz Tutuyorum) (Ghigna, 2015).

Secondly, the items related to environmentally responsible behaviors were examined in the plot of the picture storybooks for 48-72-month-old children. In the plot, clear and hidden representations of the items related to environmentally responsible behaviors were analyzed. As *Table 4.10.* demonstrates the plot of picture storybooks represents all items under the sub-categories of environmentally responsible behaviors clearly. Notably, the items of *working in agriculture* ($n=97$, 12.8%), *developing knowledge and competence in environmental issues* ($n=52$, 6.9%), *reusing waste materials in creative ways* ($n=28$, 3.7%), and *using eco-friendly vehicles and materials* ($n=24$, 3.2%) were the most represented clearly in the plot of picture storybooks. The items clearly mentioned at least in the plot were *participating in voluntary activities in nature and parks* ($n=14$, 1.9%), *reducing natural resource use* ($n=13$, 1.7%), and *making compost* ($n=8$, 1.1%) in the plot.

On the other hand, under the environmentally responsible behaviors category, the items of *working in agriculture* and *developing knowledge and competence in environmental issues* were implicitly stated in one picture storybook's plot. However,

there was no hidden representation related to environmentally responsible behaviors in the plot of picture storybooks.

Table 4. 10.

Distribution of Items of Environmentally Responsible Behaviors with Respect to Plot

Plot	<i>f</i> (Clear)	% (Clear)	<i>f</i> (Hidden)	% (Hidden)
C.Environmentally Responsible Behaviors				
C.1.Resource Management and Production				
C.1.1. Reducing natural resource use.	13	1.7	0	0.0
C.1.2. Using eco-friendly vehicles and materials.	24	3.2	0	0.0
C.1.3 Recycling the materials.	16	2.1	0	0.0
C.1.4. Working in agriculture.	97	12.8	1	0.1
C.1.5. Making compost.	8	1.1	0	0.0
C.1.6. Reusing waste materials in creative ways.	28	3.7	0	0.0
C.2.Citizen Participation				
C.2.1. Participating in voluntary activities in nature and parks.	14	1.9	0	0.0
C.2.2. Obeying the environmental rules, laws, and policies.	15	2	0	0.0
C.2.3. Developing knowledge and competence in environmental issues.	52	6.9	1	0.1

Examples from the Data Related to Environmentally Responsible Behaviors in Plot

Making compost fully representation example in the plot: “What about fertilizer? -Our poops! Fertilizer makes plants huge.” Bonkers (Safari Park’ta Dev Pancar Çılgınlığı) (Jones, 2018, p.10)

Reducing natural resource use, reusing waste materials in creative ways, and recycling the materials were found fully represented in a picture storybook plot as: “Respect all living things on our planet. Value the soil. Don't throw everything away

just because it's old. Take recycling seriously and stop meaninglessly consuming everything." (Gliori, 2016, p.12).

Thirdly, the main category of environmentally responsible behaviors was investigated in the cover pictures of storybooks, as displayed in *Table 4.11*. The most represented item in the cover pictures was *working in agriculture* ($n=11$, 1.5%). Only once represented items were *making compost* (0.1%), *obeying the environmental rules, laws, and policies* (0.1%), and *developing knowledge and competence in environmental issues* (0.1%). There was no example related to *reducing natural resource use, using eco-friendly vehicles and materials, recycling the materials, reusing waste materials in creative ways, and participating in voluntary activities in nature and parks* seen in the cover illustrations.

Table 4. 11.

Distribution of Items of Environmentally Responsible Behaviors with Respect to Cover Picture

Cover Picture	<i>f</i>	%
C.Environmentally Responsible Behaviors		
C.1.Resource Management and Production		
C.1.1. Reducing natural resource use.	0	0.0
C.1.2. Using eco-friendly vehicles and materials.	0	0.0
C.1.3 Recycling the materials.	0	0.0
C.1.4. Working in agriculture.	11	1.5
C.1.5. Making compost.	1	0.1
C.1.6. Reusing waste materials in creative ways.	0	0.0
C.2.Citizen Participation		
C.2.1. Participating in voluntary activities in nature and parks.	0	0.0
C.2.2. Obeying the environmental rules, laws, and policies.	1	0.1
C.2.3. Developing knowledge and competence in environmental issues.	1	0.1

Examples from the Data Related to Environmentally Responsible Behaviors in Cover Picture

Working in agriculture representation example in the cover picture



Figure 4. 14. Representation example of *working in agriculture* in the cover picture of Emre and Cemre 4-Working in Agriculture (Emre ile Cemre 4- Tarım Yapıyor) (Sertbarut, 2017).

Finally, the main category of environmentally responsible behaviors was investigated in the illustrations contained in the storybooks, as displayed in Table 4.12. Among these illustrations, the most represented items were found to be *working in agriculture* ($n=90$, 11.9%), *reusing waste materials in creative ways* ($n=19$, 2.5%), and *developing knowledge and competence in environmental issues* ($n=19$, 2.5%) in illustrations. On the other hand, *obeying environmental rules, laws, and policies* ($n=6$, 0.8%), *making compost* ($n=6$, 0.8%), and *reducing natural resource use* ($n=5$, 0.7%) were the least represented items under the environmentally responsible behaviors category in the illustrations of books.

Table 4. 12.

Distribution of Items of Environmentally Responsible Behaviors with Respect to Illustrations

Illustrations	<i>f</i>	<i>%</i>
C.Environmentally Responsible Behaviors		
C.1.Resource Management and Production		
C.1.1. Reducing natural resource use.	5	0.7
C.1.2. Using eco-friendly vehicles and materials.	12	1.6
C.1.3 Recycling the materials.	12	1.6
C.1.4. Working in agriculture.	90	11.9
C.1.5. Making compost.	6	0.8
C.1.6. Reusing waste materials in creative ways.	19	2.5
C.2.Citizen Participation		
C.2.1. Participating in voluntary activities in nature and parks.	7	0.9
C.2.2. Obeying the environmental rules, laws, and policies.	6	0.8
C.2.3. Developing knowledge and competence in environmental issues.	19	2.5

Examples from the Data Related to Environmentally Responsible Behaviors in Illustrations

Recycling the materials and Reusing waste materials in creative ways representation example in illustrations



Figure 4. 15. Representation example of *recycling the materials and reusing waste materials in creative ways* in illustrations of Save Nature-Global Warming (Doğayı Korumak-Küresel Isınma) (Kaur, 2014).

Making compost representation example in illustrations



Figure 4. 16. Representation example of *making compost* in illustrations of Ecological Community (Ekolojik Mahalle) (Weder, 2017).

4.2.4. What is the Variation of the Environmental Skills Presented in the Title, Plot, Cover Picture, and Illustrations of Picture storybooks for 48-72-month-old Children?

The main category of environmental skills includes six items, as presented in *Table 4.13*. The items of environmental skills were examined first in the title of the picture storybooks for 48-72-month-old children. According to the findings, there was no representation related to the environmental skills in the title of picture storybooks.

Secondly, the items related to environmental skills were examined in the plot of the picture storybooks for 48-72-month-old children. In the plot, clear and hidden representations of the items related to environmental skills were analyzed. As *Table 4.13.* demonstrates that the plot of picture storybooks clearly represents all items under the environmental skills. Particularly, the item of *skill of identifying the environmental problem* ($n=33$, 4.4%) was the most described clearly in the title of picture storybooks. The items clearly mentioned least in the plot are the *skill of implementing the environmental solution* ($n=22$, 2.9%) and the *skill of evaluating the environmental solution* ($n=22$, 2.9%). On the other hand, no hidden representations related to environmental skills were observed in the plots of these picture storybooks.

Table 4. 13.

Distribution of Items of Environmental Skills with Respect to Plot

Title	<i>f</i> Clear	% Clear	<i>f</i> Hidden	% Hidden
D. Environmental Skills				
D.1. Skill of identifying the environmental problem.	33	4.4	0	0.0
D.2. Skill of investigating the environmental problem.	26	3.4	0	0.0
D.3. Skill of analyzing the environmental problem.	24	3.2	0	0.0
D.4. Skill of proposing a solution for the environmental problem.	26	3.4	0	0.0
D.5. Skill of implementing the environmental solution.	22	2.9	0	0.0
D.6. Skill of evaluating the environmental solution.	22	2.9	0	0.0

Examples from the Data Related to Environmental Skills in Plot

The skill of identifying the environmental problem in the plot: “Don’t ask. What they call this car is making dirty fumes. The planet has become very polluted because of them” (Seçmen, 2012, p.19).

“I don't understand these people. Why do they want to destroy the forests that provide them with oxygen? “If it goes on like this, there will be few trees left in the world fifty years from now” Hophop said.” (Şenci, 2018, p.8).

The skill of investigating the environmental problem fully representation example in the plot:

“Let's first find out the way they came by following the men. Then let's think something to slow them down.” Kiki said. (Şenci, 2018, p.9).

The skill of proposing a solution for the environmental problem fully representation example in the plot: “Here is an idea! Let's make a poster that we can put on everybody's door in town.” (Şenci, 2018, p.12).

Thirdly, the main category of environmental skills was investigated in cover pictures of storybooks for 48-72-month-old children. According to the findings, there was no representation related to the environmental skills in cover pictures of picture storybooks.

Finally, environmental skills were investigated in illustrations of storybooks, as displayed in *Table 4.14*. In illustrations, the most represented items are the *skill of implementing the environmental solution* ($n=7$, 0.9%), the *skill of identifying the environmental problem* ($n=6$, 0.8%), and the *skill of investigating the environmental problem* ($n=5$, 0.7%). On the other hand, the items of *skill of analyzing the environmental problem* ($n=3$, 0.4%) and *skill of proposing a solution for the environmental problem* ($n=3$, 0.4%) were the least represented items under the category of environmental skills in illustrations of books.

Table 4. 14.

Distribution of Items of Environmental Skills with Respect to Illustrations

Illustrations	<i>f</i>	%
D. Environmental Skills		
D.1. Skill of identifying the environmental problem.	6	0.8
D.2. Skill of investigating the environmental problem.	5	0.7
D.3. Skill of analyzing the environmental problem.	3	0.4
D.4. Skill of proposing a solution for the environmental problem.	3	0.4
D.5. Skill of implementing the environmental solution.	7	0.9
D.6. Skill of evaluating the environmental solution.	4	0.5

Examples from the Data Related to Environmental Skills in Illustrations

The skill of identifying the environmental problem representation example in illustrations



Figure 4. 17. Representation example of the skill of identifying the environmental problem in illustrations of *Where is My Home? (Benim Evim Nerede?)* (Aksu-Taşyürek, 2019).

The skill of implementing the environmental solution representation example in illustrations



Figure 4. 18. Representation example of the skill of implementing the environmental solution in illustrations of Sound of Nature (Doğanın Sesi) (Şenci, 2018).

4.3.What is the Distribution of Environmental Literacy Reflected in the Title, Plot, Cover Picture, and Illustrations of Picture Storybooks for 48-72-month-old Children According to the Year of Publication and Translation Status of Books?

According to the results of the present study, the representation of Environmental Literacy varied by the year of publication and translation status. The picture storybooks published between 2010 and 2021 were investigated. Some of the mentioned books were originally written in Turkish ($n=336$, 44.5%), and some of them were translated into Turkish ($n=419$, 55.5%) from other languages such as English, Russian, and Chinese.

First, a total of 755 picture storybooks were investigated in the title of picture storybooks. According to the results, 504 titles of picture storybooks (66.75%) represented Environmental Literacy, as *Figure 4.4.* illustrated. Most of them were published in 2017 ($n=136$, 27%), and 55 of them were originally written in Turkish, while 81 of them were translated books. On the other hand, Environmental Literacy was represented at least in title in 2020 ($n=12$, 2.4%). 7 of them were originally written in Turkish, while 5 of them were translated books.

The distribution of Environmental Literacy in the title of picture storybooks is displayed in *Figure 4.4*.

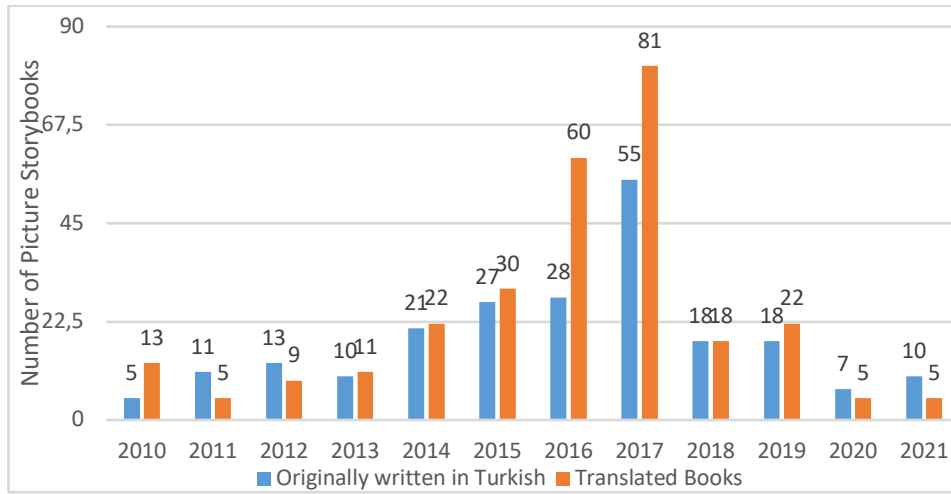


Figure 4. 19. Distribution of Environmental Literacy in titles of picture storybooks

Secondly, a total of 755 picture storybooks were investigated in the plot. Clear and hidden representations were investigated. As *Figure 4.5* demonstrates that 752 plots of picture storybooks (99.6%) clearly represented Environmental Literacy. 183 of them were published most in 2017 (24.3%), and 104 of them were originally written in Turkish, while 79 of them were translated books. On the other hand, Environmental Literacy was clearly represented the least in the plot in 2020 ($n=15$, 2%). 7 of them were originally written in Turkish, while 8 of them were translated from other languages.

The distribution of clear representation of Environmental Literacy in plots of picture storybooks is displayed in *Figure 4.5*.

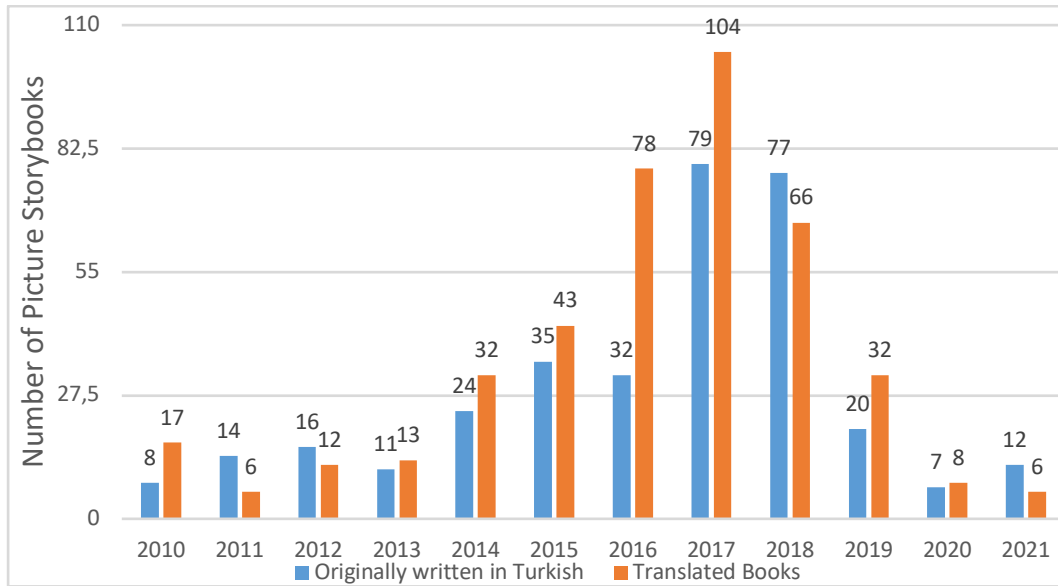


Figure 4. 20. Distribution of clear representations of Environmental Literacy in plots of picture storybooks

As *Figure 4.6.* demonstrates that 56 plots of picture storybooks (7.41%) represented partially Environmental Literacy. 13 of them were published most in 2017 (23.2%), and 2 of them were originally written in Turkish, while 11 of them were translated books. On the other hand, Environmental Literacy was represented partially at least in plots in 2010 ($n=1$, 1.8%) and 2021 ($n=1$, 1.8%). These were originally written as Turkish books.

The distribution of hidden representations of Environmental Literacy in the plot of picture storybooks is displayed in *Figure 4.6.*

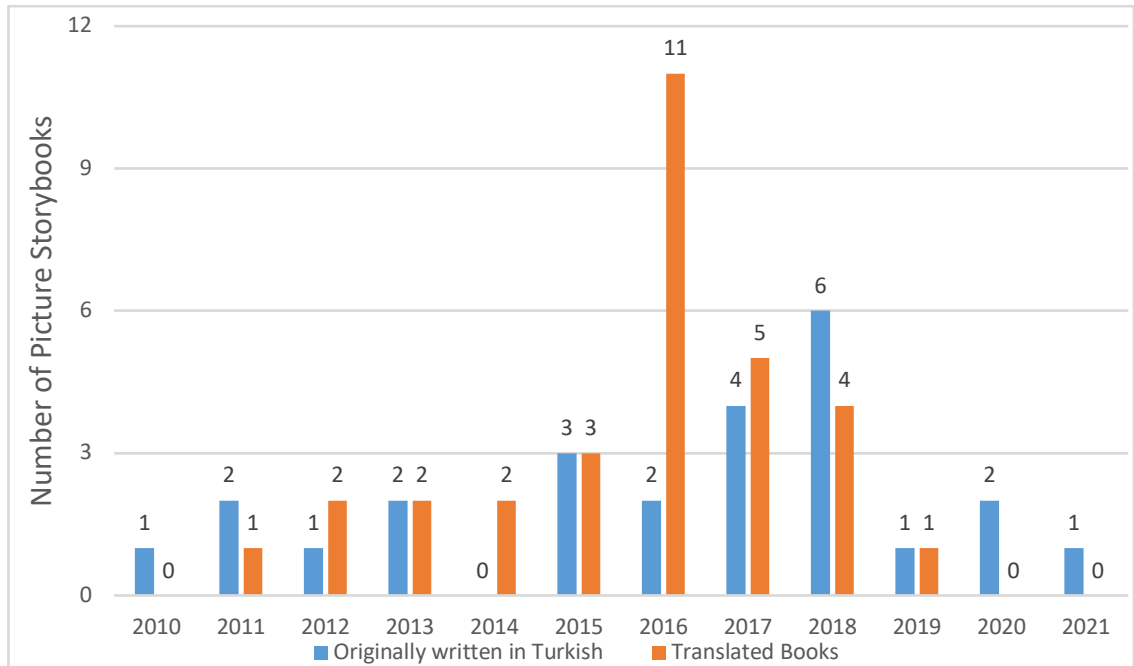


Figure 4. 21. Distribution of hidden representations of Environmental Literacy in plots of picture storybooks

Thirdly, the cover pictures of the 755 picture storybooks were investigated in terms of Environmental Literacy. Accordingly, 747 cover pictures (98.94%) represented Environmental Literacy. 183 of them were published in 2017 (24.5%), and 79 of them were originally written in Turkish, while 104 of them were translated books. On the other hand, Environmental Literacy was represented the least in titles in 2020 ($n=14$, 1.87%). Seven of them were originally written in Turkish, while five of them were translated books.

The distribution of Environmental Literacy depicted on the cover of picture storybooks is displayed in *Figure 4.7*.

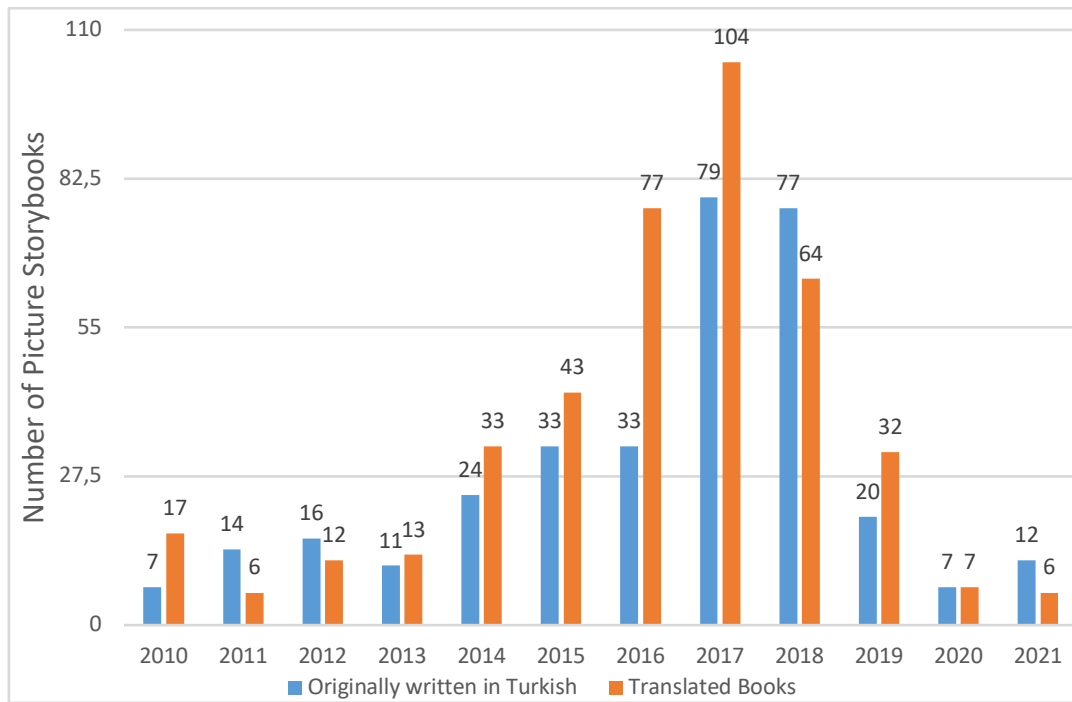


Figure 4. 22. Distribution of Environmental Literacy in cover pictures of picture storybooks

Finally, all 755 picture storybooks in the sample were investigated in terms of the illustrations they used. Most of the illustrations found in picture storybooks (99.6%) represent Environmental Literacy. 184 of them were published most in 2017 (24.4%), and 79 of them were originally written in Turkish, while 105 of them were translated books. On the other hand, Environmental Literacy was represented the least in titles in 2020 ($n=15$, 2%). 7 of them were originally written in Turkish, while 8 of them were translated from other languages.

The distribution of Environmental Literacy in illustrations of picture storybooks is displayed in *Figure 4.8*.

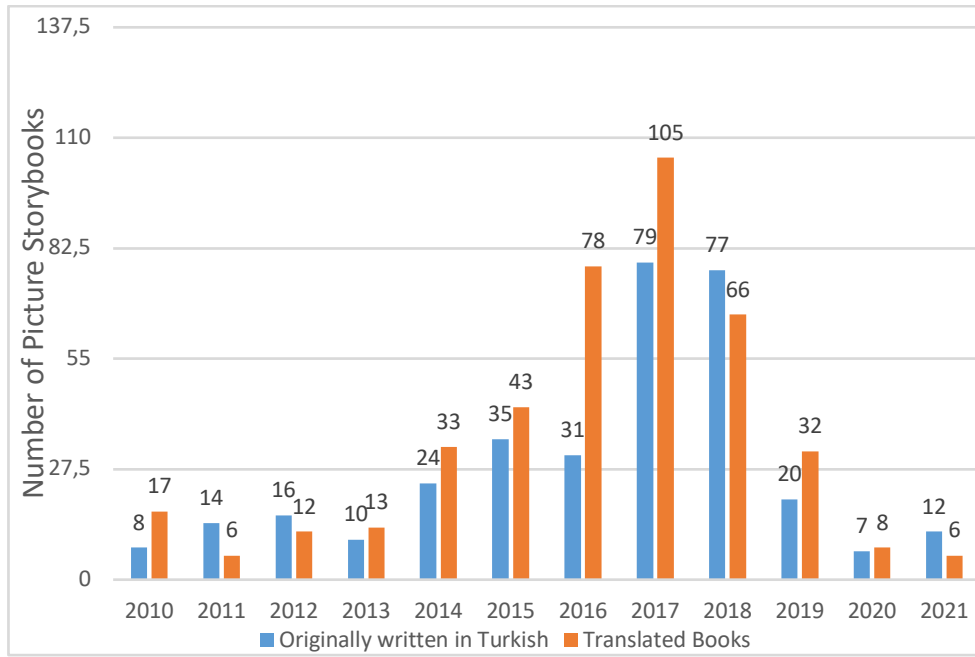


Figure 4. 23. Distribution of Environmental Literacy in illustrations

CHAPTER 5

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

This chapter provides a summary of the present study and a brief overview of the major findings. It then continues to discuss the findings of this investigation of the representations of Environmental Literacy among picture storybooks in one children's library in Ankara. The findings are also compared with international and national empirical studies. Finally, this chapter concludes by offering implications for practice and outlining recommendations for future studies.

5.1. Discussion

The present study investigated the representations of four components of Environmental Literacy in picture storybooks for 48-72-month-old children. These components are environmental knowledge, affective dispositions toward the environment, environmentally responsible behaviors, and environmental skills. A codebook was generated with fifty-two items under these four categories. A content analysis study was conducted with 755 picture storybooks for 48-72-month-old children by examining their titles, plots, cover pictures, and illustrations. Descriptive characteristics and representations of Environmental Literacy were analyzed in the present study. Since the present study is rare regarding research related to representations of Environmental Literacy in children's literature, the study's findings might be utilized to derive inductive reasoning about the Environmental Literacy components within the picture storybooks for 48-72-month-old children.

5.1.1. Descriptive Characteristics of Picture Storybooks

In the scope of this study, 755 picture storybooks reached from the Nasreddin Hoca Children's Library were investigated. Picture storybooks published between 2010-2021 were included in the present study. According to the findings, most picture storybooks were published in recent years, specifically in 2016, 2017, and 2018. Similar to this finding, some studies conducted at children's libraries reported that most picture storybooks were published recently (Alan, 2015; Goins, 2004; Sarı, 2019; Veziroğlu & Gönen, 2012). This prevalent finding might have resulted from the annual updating of the book collection in children's libraries, where the latest publications predominate.

Investigated picture storybooks were published by 134 different publishers. 7.94% of them were published by İş Bankası Kültür Publishing, 6.88% of them by 1001 Çiçek Kitaplar Publishing, 5.4% of them published by Yapı Kredi Publications. Some publishers owned only one or two picture storybooks included in the study. As the present study did not restrict the range of publishers, a wide variety of publishers were accessed.

According to findings related to the translation status of picture storybooks, more than half (55.5%) were translated from other languages such as English, Russian, and Chinese. The remainder of the sampled books were originally written in Turkish. In parallel with this finding, another study of picture storybooks published in Turkey found that half were originally written in Turkish (Işıtan, 2016). Similar to the findings of the current study, Kozikoğlu (2013) also reported that the number of picture storybooks published for children 0-6 years old in Turkey is much less than in Western Countries.

Additionally, a few of the picture storybooks in the current sample (3.8%) received at least one national or international literary award. These were the Caldecott Award, the New York Times Best Illustrated Children's Books, and the Bologna Children's Book Fair-New Horizons Award. The most award-winning picture storybooks were translated from other languages. Similarly, Büyükalın-Filiz & Harmankaya (2019)

found that the award-winning picture storybooks available in Turkey were mostly translated. It was clear that only a small proportion of the sample had been selected by literary boards as being noteworthy. Although a large number of books are published, only the most distinguished are chosen to receive the award. This result is to be expected due to the lower number of award-winning picture storybooks published in Turkey compared to other countries. Furthermore, the sample in this study was not restricted according to literary qualities.

5.1.2. Variation of Environmental Literacy Presented in Picture Storybooks

In the scope of the study, environmental knowledge, affective dispositions toward the environment, environmentally responsible behaviors, and environmental skills, which are the main categories of Environmental Literacy, were examined in picture storybooks for 48-72-month-old children. According to the key findings, Environmental Literacy components were observable within 66.7% of titles, 98.9% of cover pictures, and 99.6% of illustrations of picture storybooks. Picture storybooks offered Environmental Literacy with a full or partial representation in plot. 99.6% of plots of picture storybooks fully present, and 7.4% of plots partially present Environmental Literacy. The texts were specifically examined for any clear or hidden messages in the plot, and the illustrations were examined for how they portrayed those activities. It was noted that children could learn more at school than what is explicitly included in school curricula and hidden environmental messages in children's literature help children to make sense of prior experiences (Cutter-Mackenzie, 2014), and picture storybooks are high-quality elements of children's literature that depict the environment through texts and illustrations (Wason-Ellam, 2010). Güzelyurt and Özkan (2019) concluded in their research on children's books used in the pre-school period that most of the books examined were insufficient in terms of explaining the love of nature, environmental problems, and the precautions to be taken for environmental problems. One of the aims of Agenda 21 compromised by the Earth Summit Conference held in Rio de Janeiro, Brazil, in 1992 was that Education for Sustainable Development aims to integrate environmental education in formal educational programs by reaching people of all age groups (Drexhage & Murphy, 2010; Hofman-Bergholm, 2018). According to the Tbilisi Conference Report, training

people with awareness and responsibilities about environmental problems can succeed with Early Childhood Environmental Education (ECEE) (Potter, 2010). Integration of early childhood education and sustainable development was also focused on the 17 main goals of the Sustainable Development Goals (Boyd, 2019). According to these, all citizens of the world must be environmentally literate because Environmental Literacy is a framework that envisions the formation of necessary behaviors to understand and sustain environmental systems (Dietz et al., 2005). Accordingly, the components of Environmental Literacy may have started to appear in picture storybooks with the effect of equipping children with compatible knowledge and skills.

In the present study, the first main category was environmental knowledge. Under this category, three sub-categories and twenty-six items were investigated. According to the findings of the present study, environmental knowledge was mostly presented in picture storybooks' titles, plots, cover pictures, and illustrations. Specifically, the most represented sub-category in the present study was ecological knowledge. More than half of picture storybooks present ecological knowledge in terms of *knowledge of biotics (living things) in nature*. Other highly represented items are *knowledge of characteristics of living things, knowledge of the solar system, knowledge of habitat, and knowledge of seasons, climate, and natural events*. Similarly, Erdoğan et al. (2011) investigated Environmental Literacy in sixty-three books from 100 Basic Literary Books suggested by the Ministry of National Education, and the findings of this study showed that environmental knowledge was the most mentioned category in children's literature. This common finding suggests that environmental knowledge covers the normative part of Environmental Literacy. In line with the present study's findings, ecological knowledge, mainly on the interrelationships between all living things, food chains, and natural systems they live, was presented at primary education levels (Chu et al., 2007).

On the other hand, the normative part of Environmental Literacy includes socio-economic, political, and cultural knowledge (Kollmus & Agyeman, 2002). Under the second sub-category of cultural, political, and socio-economic knowledge, a few picture storybooks presented the items of *knowledge of transportation, knowledge of*

settlement, and *knowledge of industry and working fields*. Consistent with previous studies (Erdoğan et al., 2011; Chu et al., 2007), items under the socio-political and cultural knowledge sub-category were presented less in the present study. Especially most of the books mentioned the item of *knowledge of environmental rights*, such as survival, developmental, educational, and play rights, in a hidden way in the present study. A hidden representation example was given "Everybody says children should go to school." (Pellai & Tamborini, 2019, p.2). Implicitly covering children's rights in picture storybooks might convey a message to parents to support their children's education. Accordingly, it was seen that parents do not have sufficient knowledge about children's rights (Dinç, 2015). Alpay and Tuna (2021) claimed that parents might be informed about children's rights through children's books.

Regarding the last sub-category of knowledge of environmental issues and problems, the items of *knowledge of pollution*, *knowledge of natural disasters*, *knowledge of deforestation*, and *knowledge of global warming* were rarely represented in picture storybooks for 48-72-month-old children. This finding may relate to how children's books are prepared. According to Sobel (1996), environmental problems should be addressed without creating an environmental fear or phobia in early childhood educational settings. Therefore, environmental problems such as global warming, pollution, and deforestation were presented partially and by addressing children's immediate environment.

Apart from that, according to the North American Association for Environmental Education (NAAEE) Environmental Literacy Report, environmental knowledge is widespread in America regardless of age and level of education. According to the report, about 80% of Americans are heavily influenced by incorrect pieces of information related to environmental issues (Hollweg, 2011). However, environmental knowledge leads directly to affective dispositions toward the environment. For this reason, picture storybooks are vital in establishing positive feelings, appreciation, and caring about the environment.

The present study also examined the texts and illustrations in the sample for affective dispositions toward the environment. Under this category, eleven items were

investigated. Accordingly, the most popular one seeks to engender *positive feelings about the environment*, followed by *negative feelings about the environment*. Negative ones include fear of the dark, dislike of water, being upset, and concern about cutting trees. These may have been given in order to reduce children's concerns and fears about the environment by concluding the plot with a fine conclusion. On the other hand, texts and illustrations least reflected items concerning the *environmental locus of control* and *environmental self-efficacy*. According to Ajzen & Fishbein (1980) and Bandura (1999), these elements are critical to performing an environmentally responsible behavior. The research by Scott & Willits (1994) shows a significant relationship between affective dispositions and environmentally responsible behaviors. In addition, Levy et al. (2018) found that cognitive aspects such as system thinking, action-related knowledge, and cultural knowledge are very significant in predicting environmentally responsible behaviors. Similarly, Varoğlu et al. (2017) state that environmental knowledge guides affective dispositions and environmentally responsible behaviors. However, Liu et al. (2015) found that knowledge and affective dispositions are not correlated with environmentally responsible behaviors.

In the present study, the third main category, environmentally responsible behaviors, was investigated in two sub-categories comprised of nine items. The sub-categories are resource management and production, and citizen participation. According to the present study's findings, the resource management and production sub-category was represented more than citizen participation. The most popular items in texts and illustrations were *reducing natural resource use, working in agriculture, reusing waste materials in creative ways, and using eco-friendly vehicles and materials*. The reason for such findings is that children's literature on farming enables them to broaden their horizons in productivity (Marlow, 1998). Moreover, picture storybooks have been found beneficial to the provision of daily life opportunities for children by presenting rural areas and farms (Eppley, 2010). Accordingly, many people participated in The World Summit for Sustainable Development (also called the Johannesburg Summit) held in South Africa in 2002, which suggested reducing water and energy use, increasing agricultural activities, and promoting productivity (Sato, 2006). These are parallel with the Millennium Development Goals (MDGs) (UNESCO, 2010) in increasing productivity and reducing natural resource use. Not surprisingly, picture

storybooks presented agriculture mostly in the title, plot, cover picture, and illustrations in the scope of the present study. Similar to the present study's findings, Koller (2013) investigated representations of modern American farming in 45 picture storybooks provided to children and found that 80% of them mentioned working in agriculture. According to Black (2008), the subject of agriculture began to be covered in urban schools to give children information about production processes and how produce comes to market. Also, the primary school curriculum was enriched with natural studies and agriculture after the 1940s (Kaptan, 1999). In addition, environmentally responsible behaviors include consumer action and eco-management (Volk & McBeth, 1997). Accordingly, the 12th Sustainable Development Goal is related to ensuring sustainable consumption and production patterns (UNESCO, 2015) and is represented in the current study under the items of *reducing natural resource use, reusing waste materials in creative ways, and using eco-friendly vehicles and materials* that seek to encourage children to be more productive rather than being unconscious consumers. Similarly, Erdoğan et al. (2011) found that environmentally responsible behaviors (i.e., planting, reducing water and electricity, and managing waste materials) were highly presented. It may be concluded that environmentally responsible behaviors are the primary outcomes of Environmental Literacy. Furthermore, environmentally responsible behaviors are more observable and measurable than other categories because they require physical action.

On the other hand, the sub-category of citizen participation was rarely found in picture storybooks. The item relating to *developing knowledge and competence in environmental issues* was mentioned and demonstrated more than the one for *obeying environmental rules, laws, and policies, and participating in voluntary activities in nature and parks*. The Environmental Literacy framework developed by Hollweg et al. (2011) defines the participation in civic life as being engaged as an environmentally literate citizen, both as an individual and in collaboration with others. In this way, one can go on to make decisions and act in environmental contexts that benefit oneself, society, and nature. The lack of these elements in picture storybooks may be due to the intensification of text and illustrations in raising children's environmental awareness.

Environmental skills were investigated by the present study of picture storybooks under six items. These are identifying the environmental problem, investigating the environmental problem, analyzing the environmental problem, proposing a solution to the environmental problem, implementing the solution, and evaluating it. The researcher found that environmental skills were presented least in the texts and illustrations of these publications. Environmental skills were not observed in any of the titles and cover pictures. The plot and illustrations reflected environmental skills in a minimal way, and the items had dependent and hierarchical representations. To put it differently, the item of *identifying the environmental problem* was mostly presented in texts. And then, the other items of *investigating the environmental problem*, *analyzing the environmental problem*, and *proposing a solution for the environmental problem* were presented in texts. There is no visual representation related to these items. *Implementing the environmental solution* and *evaluating the environmental solution* were rarely found in texts and illustrations. Correspondingly, representation of environmental skills was only found in one previous study (Erdoğan et al., 2011). This situation may have arisen because it is thought that environmental skills require higher-order thinking skills, including remembering, understanding, applying, analyzing, and evaluating (Forehand, 2005; Hollweg et al., 2011). According to Hollweg et al. (2011), environmental skills are categorized as ones that can be used and demonstrated in assessment and real-world settings for an environmental purpose. For instance, the ability to receive sensory input and interpret it based on prior knowledge and experience is necessary for identifying an environmental problem or issue. Identifying an environmental problem might also be the ability to use appropriate media sources, discriminate between environmental problem characteristics, and compare their differences (Hollweg et al., 2011). Therefore, storytelling and other language activity plans with picture storybooks can be implemented by planning the objectives and indicators according to Bloom's Cognitive Domain taxonomy. Bloom's Taxonomy of Cognitive Domain is a six-tiered model of classifying thinking based on complexity (Forehand, 2005). Remembering is the first layer covering such activities as describing where polar bears lived. Understanding is the second layer, which refers to summarizing what a story is about. Following that, applying and analyzing are directly related to environmental skills, including identifying an environmental problem and implementing a proposed environmental

solution. Then, the evaluating layer includes an assessment of whether an action to solve environmental issues really happened as intended or really worked. A creating layer is located at the top of the pyramid, and children can perform their knowledge, affective dispositions, as well as environmental skills (identifying, investigating, analyzing, proposing, implementing, and evaluating), to protect the environment with environmentally responsible behaviors. As a result, texts and illustrations might be insufficient to reflect environmental skills in picture storybooks published for children.

According to the concluding findings of the present study, representations of Environmental Literacy differed depending on the publication year and translation status of the picture storybooks. According to the publication years, Environmental Literacy appeared more frequently in picture storybooks published in 2016, 2017, and 2018. This rise may be tied to the 17 Sustainable Developmental Goals that UNESCO published in 2015, one of which is growing environmentally literate individuals by 2030 (Rieckmann, 2017). In particular, the 4th SDG named Quality Education, aims to promote Environmental Education at all educational levels, including early childhood education, through pedagogical practices (Fuertes-Camacho et al., 2019). So, while presenting the SDGs to young children, books enable teachers to expand their curricula and inspire children to connect environmental knowledge and improve the globe with environmentally responsible behaviors (Holshouser & Medina, 2021). Additionally, governments negotiated at the Rio +20 Conference in 2012 on the value of education for sustainability. It was determined that for a further ten years, educational activities might be conducted more actively (UN General Assembly, 2012). As a result, these worldwide initiatives may impact children's literature, which included more Environmental Literacy components during those years.

When considering the initiatives in Turkey, many projects by the Ministries of Environment, Urbanization, and Climate Change and National Education have attempted to extend Environmental Education throughout the schools (Önal et al., 2019). However, the previous studies that investigated the MoNE 2013 Preschool Education Program in terms of Environmental Education showed that there are low-level objectives and gains related to environmental concepts and skills (Gülay & Ekici, 2022; Özkan & Tuğluk, 2020). These studies all agree that the program should be

expanded to include more elements of Environmental Education. On the other hand, the primary and secondary school curriculums have been revised with more lesson plans on environmental concepts. These concepts are the human-environment relationship, biodiversity, living things and energy, ecosystems, clean environment and healthy future, food chains, energy sources, and environmental problems (Ürey & Aydın, 2014). According to Onur et al. (2016), Environmental Education takes place at all education levels. For this purpose, authors and publishers of picture storybooks might begin to include Environmental Literacy components in recent years. In addition, explicit and implicit messages have started to be given in primary and secondary school textbooks in order to enhance children's environmental awareness and knowledge after these revisions of school curricula (Önal et al., 2019). As highlighted in the current study's findings, a similar trend can also be recognized in recently published picture storybooks representing Environmental Literacy components for young learners, especially in 2016, 2017, and 2018.

According to translation status, more than half of these books were translated books (55.5%). Accordingly, partial representations of Environmental Literacy were mostly presented in translated picture storybooks published in 2016. At the end of the 2010s, representations of Environmental Literacy were more obvious in texts and illustrations. This could be explained by the fact that Environmental Education has received increased attention in a variety of early childhood education studies over the last decade (Ardoin & Bowers, 2020; Aurelio et al., 2021; Häggström & Schmidt, 2020; Fang, 2018; Green & Dymont, 2018). Therefore, this finding of the study showed that representations of Environmental Literacy increased in picture storybooks in the last few years because of the recent use of picture storybooks as a tool for Environmental Education in educational settings.

5.2. Implications

This study investigated representations of Environmental Literacy, as one of the primary goals of Environmental Education, in the texts and illustrations of children's picture storybooks for 48-72-month-olds. The study's findings may provide

implications not only for authors or publishers but also for teachers, parents, and researchers.

In the scope of the study, picture storybooks for 48-72-month-old children were found to be rich in terms of environmental knowledge. Especially ecological knowledge and socio-cultural and political knowledge were sufficiently presented. However, knowledge of environmental problems and issues was rarely mentioned. By providing environmental knowledge in picture storybooks, children's awareness and a better understanding of environmental challenges can be raised by inspiring them to think about environmental problems and issues and to act responsibly in the future (Aurelio et al., 2021; Kelly et al., 2021). Following this notion, authors and publishers of illustrated storybooks for children are suggested to address environmental problems and issues like global warming, pollution, poverty, biodiversity loss, and deforestation.

According to a study conducted with pre-school children aged 4-6, when children were given abstract concepts verbally, they could not associate such concepts with the environment (Honig & Mennerich, 2013). As a matter of fact, according to Piaget (1977), early childhood children have difficulty in understanding abstract concepts and fall into misconceptions. For this reason, concepts related to the environment need to be concretized with developmentally appropriate practices for children (Copple & Bredekamp, 2009). At this point, teachers and parents play a critical role in shaping future environmentally literate citizens with adequate environmental knowledge. Teacher-child and parent-child reading activities enhance children's environmental knowledge and thinking skills (Fang, 2018). Moreover, discussing illustrations in picture storybooks helps children imagine daily life experiences around them (Yu, 2012). For this reason, teachers and parents can use picture storybooks, which are concrete educational materials to allow children to understand environmental concepts via messages in text and illustrations (Hsiao & Shih, 2016). While storytelling, parents, and teachers would prefer interactive reading with questioning, discussing, and comparing daily life experiences with children rather than only an oral narration of plots. Furthermore, cover pictures and illustrations of picture storybooks can be discussed. Showing illustrations helps children visualize the environmental knowledge and imagine the messages related to the environmental issues given in the texts.

With respect to affective dispositions toward the environment, appreciation and positive feelings about the environment including love, sensitivity, hope about the environment, and empathy for living things in nature were mostly reflected in picture storybooks. However, negative feelings about the environment including sadness, fear, and pessimism were highly mentioned in plots and demonstrated via illustrations from a child's point of view in picture storybooks. Presenting negativity may lead to prejudices and phobias in children about nature (Sobel, 1996). Therefore, authors and publishers can highlight appreciation, love, hope, respect, and curiosity in picture storybooks. Accordingly, picture storybooks are crucial in developing attitudes and interest toward the environment (Aurelio et al., 2021). In addition, self-efficacy and locus of control are determinants of environmentally responsible behaviors (Ajzen & Fishbein, 1980; Bandura, 1999). Therefore, children's beliefs about their capabilities can be supported via picture storybooks with texts and illustrations. If children trust themselves, they can be eager to act on environmental challenges and take on responsibility for solving them.

Environmentally responsible behaviors should also be given more emphasis in picture storybooks. According to Hollweg et al. (2011), such behaviors are the greatest expression of Environmental Literacy. Hsiao & Shih (2015) showed that picture storybooks are highly effective tools for developing environmentally responsible behaviors in children. Therefore, such publications can be enriched with the reference to topics such as using eco-friendly materials, making compost, participating in voluntary activities with others and obeying environmental policies. Doing so will help to encourage children to demonstrate those behaviors at home and in classroom settings, and working collectively with peers, parents, and other members of society to protect the environment.

Then, it can be claimed that environmental skills were given very little attention in picture storybooks. To develop children's Environmental Literacy, environmental skills might be presented more in picture storybooks. Authors, publishers, and teachers can start from identifying an environmental problem to evaluate environmental solutions with children. Especially, thinking about and implementing solutions to environmental problems should be more provided for in such picture storybooks. In

this way, children's higher order thinking skills and environmental competencies to cope with environmental challenges can be supported via the conveyed messages in texts and illustrations of picture storybooks.

Finally, the findings revealed that Environmental Literacy components represented in the title, plot, and illustrations were not appropriately reflected in the cover pictures. It is important because picture storybooks are first introduced by their covers (Asan, 2021). Most readers look at the cover of the book to develop their initial opinion about the book (Strnad & Magnusson-Hewitt, 2021). It has been discovered that children begin viewing information about the book's subject matter by examining the cover pictures (Ratminingsih et al., 2020). Therefore, the authors and publishers might be suggested to add more Environmental Literacy components to the cover pictures to accurately represent the picture storybook's content.

5.3. Recommendations for Further Studies

The literature reveals that picture storybooks are very efficient tools for introducing environmental concepts to children (Pe'er et al., 2007). As a result, more content analysis studies can be conducted to contribute to the literature. The present content analysis study was conducted with an Environmental Literacy codebook generated by the researcher. As the study's sample, a total of 755 picture storybooks in one children's library in Ankara were included in the study via the purposive sampling method. Further studies might be conducted using the same codebook with different and larger samples from various national or school libraries. With this way, researchers can obtain data from different samples and draw more generalizable conclusions.

This study also analyzed the potential of illustrated storybooks to represent Environmental Literacy in terms of frequencies and percentages. Further studies may examine the Environmental Literacy representations to obtain thick descriptions via qualitative research. Furthermore, although there are some international studies, there is no study conducted with in-service pre-school teachers or pre-service pre-school teachers in Turkey. Pre-school teachers are as a bridge between picture storybooks and children. The messages conveyed by texts and illustrations can reach exactly to

children with the help of the pre-school teachers. The teacher's level of Environmental Literacy correlates with the ability to teach children environmental concepts (Aini & Laily, 2010; Goulgouti et al., 2019; Liu et al., 2015; Pe'er et al., 2007; Yavetz et al., 2009). Therefore, determining the Environmental Literacy levels of pre-school teachers might be a valuable subject of further research.

REFERENCES

- Abrahamse, W., & Steg, L. (2011). Factors related to household energy use and intention to reduce it: the role of psychological and socio-demographic variables. *Research in Human Ecology*, 18(1), 30-40.
- Adelman, C. (2000). Over two years, what did Froebel say to Pestalozzi?. *History of Education*, 29(2), 103-114. <https://doi.org/10.1080/004676000284391>
- Aini, M. & Laily, P. (2010). Preparedness of Malaysian pre-school educators for environmental education. *Pertanika Journal of Social Sciences & Humanities*, 18(2), 271-283.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Process*, 50, 179-211.
- Ajzen, J., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Prentice-Hall.
- Akitsu, Y., & Ishihara, K. N. (2018). An integrated model approach: exploring the energy literacy and values of lower secondary students in Japan. *International Journal of Educational Methodology*, 4(3), 161–186. <https://doi.org/10.12973/ijem.4.3.161>
- Aksu-Taşyürek, S. (2019). *Benim Evim Nerede?*. Timaş Kids Publishing.
- Alan, H. A. (2015). *Sustainable actions in picture storybooks for 4-to-6-year-olds: A content analysis study with respect to 7R* [Master's thesis, Middle East Technical University]. YÖK Ulusal Tez Merkezi. <https://tez.yok.gov.tr/UlusalTezMerkezi/TezGoster?key=Wbc656i315e2eV6-EZV1olt32OIGWggVGEv9okyOS9LZ65o1aCyKdXPNzlbwn1z>
- Almond, R. E., Grooten, M., & Peterson, T. (2020). *Living Planet Report 2020-Bending the curve of biodiversity loss*. World Wildlife Fund. <https://pure.iiasa.ac.at/id/eprint/16870/1/ENGLISH-FULL.pdf>

- Alpay, B. & Tuna, C. (2021). Okul öncesine yönelik hikâye kitaplarının çocuk hakları açısından incelenmesi. *Adnan Menderes Üniversitesi Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 12(1), 1-14.
- Amardini, N. A., Redhana, I. W., & Suja, I. W. (2021). Does parents' work affect students' Environmental Literacy in Bali, Indonesia? *Proceedings of the First International Conference on Science, Technology, Engineering and Industrial Revolution (ICSTEIR 2020)*, 536, 328-331. <https://doi.org/10.2991/assehr.k.210312.054>
- Anonymous. (2016). *Dünyamızı ısıtan sarı Güneş*. Pötikare Publishing.
- Anonymous. (2017). *Dinozor çağı çöl maceraları*. Damla Publishing.
- 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>
- Arlemalm-Hagser, E. (2013). Respect for nature: A prescription for developing environmental awareness in preschool. *Centre for Educational Policy Studies Journal*, 3, 25-44.
- Asan, T. (2021). Kitap kapağının iki yüzü . *Akdeniz Sanat* , 15 (28) , 227-254. <https://doi.org/10.48069/akdenizsanat.942223>
- Aurelio, L., França, S., Sequeira, V., Boaventura, D., Correia, M. J., Pinto, B., Amoroso, S., Feio, M. J., Brito, C., Chainho, P., & Chaves, L. (2021). Tell a story to save a river: Assessing the impact of using a children's book in the classroom as a tool to promote environmental awareness. *Frontiers in Marine Science*, 8(699122), 1-9. <https://doi.org/10.3389/fmars.2021.699122>
- Bailey, A. A. (2006). Retail employee theft: a theory of planned behavior perspective. *International Journal of Retail & Distribution Management*, 34, 11, 802-816.
- Bamberg, S., Ajzen, I., & Schmidt, P. (2003). Choice of travel mode in the theory of planned behavior: The roles of past behavior, habit, and reasoned action. *Basic and applied social psychology*, 25(3), 175-187. https://doi.org/10.1207/S15324834BASP2503_01

- Bandura, A. (1999). Social cognitive theory of personality. *The coherence of personality: Social-cognitive bases of consistency, variability, and organization*, 185-241.
- Basile, C.G. (2000). Environmental education as a catalyst for transfer of learning in young children. *Journal of Environmental Education*, 32(1), 21-28. <https://doi.org/10.1080/00958960009598668>
- Black, S. (2008). Understanding agriculture. *American School Board Journal*, 195(6), 42-49.
- Blanchard, P. B. & Buchanan, T. K. (2011). Environmental stewardship in early childhood. *Childhood Education*, 87 (4), 232-238. <https://doi.org/10.1080/00094056.2011.10523184>
- Boyd, D., (2019). Utilising place-based learning through local contexts to develop agents of change in Early Childhood Education for Sustainability. *Education 3-13*, 47(8), 983-997. <http://dx.doi.org/10.1080/03004279.2018.1551413>
- Bradbery, D. (2013). Bridges to global citizenship: Ecologically sustainable futures utilizing children's literature in teacher education. *Australian Journal of Environmental Education*, 29(2), 221-237. <https://doi.org/10.1017/ae.2014.7>
- Broch, H. B. (2004). The green valley of childhood ñ on the significance of experiences of nature in childhood. *Norwegian Journal of Anthropology*, 15(1-2), 101-113.
- Büyükalan-Filiz, S. & Harmankaya, T. (2019). Ödüllü resimli çocuk kitaplarında çocuk haklarının incelenmesi. *Milli Eğitim Dergisi*, 48(1), 769-791.
- Camilli, G., Vargas, S., Ryan, S., & Barnett, W. S. (2010). Meta-analysis of the effects of early education interventions on cognitive and social development. *Teachers college record*, 112(3), 579-620. <https://doi.org/10.1177/016146811011200303>
- Carle, E. (2010). *Aç irtül*. (F. Erdoğan, Trans.). Mavi Bulut Publishing.
- Cengizoğlu, S. (2013). *Investigating potential of education for sustainable development program on preschool children's perceptions about human-environment interrelationship* [Master's thesis, Middle East Technical

University]. YÖK Ulusal Tez Merkezi.
<https://tez.yok.gov.tr/UlusalTezMerkezi/TezGoster?key=iTkOhwevEenJZ3onUvs52hJD3u00meS5rQCXmelxFWTgRwlugK68vcx2uwTQwenb>

- Chapman, S. N., & O’Gorman, L. (2022). Transforming Learning Environments in Early Childhood Contexts Through the Arts: Responding to the United Nations Sustainable Development Goals. *International Journal of Early Childhood*, 54(1), 33-50. <https://doi.org/10.1007/s13158-022-00320-3>
- Chawla, L. (1999). Life paths into effective environmental action. *The Journal of Environmental Education*, 31(1), 15-26. <https://doi.org/10.1080/00958969909598628>
- Chen, M. F., & Tung, P. J. (2010). The moderating effect of perceived lack of facilities on consumers’ recycling intentions. *Environment and Behavior*, 42, 824-844. <https://doi.org/10.1177/0013916509352833>
- Chien, Y. (2016). *Ayça ’nun Yeni Evi.*(Ç. Kaplangı, Trans.). Yapı Kredi Publishing.
- Chu, H., Lee, E. A., Ko, H. R., Shin, D. H., Lee, M. N., Min, B. M., & Kang, K. H. (2007). Korean year three children’s environmental literacy: A prerequisite for a Korean environmental education curriculum. *International Journal of Science Education*, 29(6), 731-746. <https://doi.org/10.1080/09500690600823532>
- Clarke, J. & Birkett, G. (2016). *Afacan maymun nasıl yemek yer?* 1001 Çiçek Kitaplar Publishing.
- Connell, S., Fien, J., Lee, J., Sykes, H., &Yencken, D. (1999). If doesn’t directly affect you, you don’t think about it: A qualitative study of young people’s environmental attitudes in two Australian cities. *Environmental Education Research*, 5(1), 95-114. <https://doi.org/10.1080/1350462990050106>
- Copple, C., & Bredekamp, S. (2009). Developmentally appropriate practice in early childhood programs serving children from birth through age 8. National Association for the Education of Young Children.
- Creswell, J.W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Sage Publications.
- Culen, G.R. (2001). The status of environmental education with respect to the goal of responsible citizenship behavior. In H.R. Hungerford, W.J. Bluhm, T.L. Volk

& J.M. Ramsey (Eds.), *Essential Readings in Environmental Education*. Stipes Publishing.

Curdt-Christiansen, X. L. (2020). Environmental Literacy: Raising awareness through Chinese primary education textbooks. *Language, Culture and Curriculum*, 34(2), 147-162. <https://doi.org/10.1080/07908318.2020.1797078>

Cutter-Mackenzie, A. (2014). Where are children and young people in environmental education research?. *Australian Journal of Environmental Education*, 30(1), 103-105. <https://www.jstor.org/stable/26422851>

Çabuk, B., Baş, T., & Teke, N. (2017). Resimli öykü kitaplarındaki görseller ve metinler masum mu? İletilen doğal çevre mesajları. *Bartın Üniversitesi Eğitim Fakültesi Dergisi*, 6(3), 984-1016. <https://doi.org/10.14686/buefad.310561>

Dahl, M. (2018). *Ayıcık teşekkür ediyor*. 1001 Çiçek Books Publishing.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management science*, 35(8), 982-10. <http://www.jstor.org/stable/2632151>

Davis, J. (2008). What might education for sustainability look like in early childhood? A case for participatory, whole-setting approaches. In Kaga, Yoshie & Samuelsson, Ingrid Pramling (Eds.). *The Role of Early Childhood Education for a Sustainable Society*. Unesco. 18-24.

Davis, J., Engdahl, I., Otieno, L., Pramling-Samuelson, I., Siraj-Blatchford, J. & Vallabh, P. (2009). Early childhood education for sustainability: recommendations for development. *International Journal of Early Childhood*, 41(2), 113-117. <https://doi.org/10.1007/BF03168882>

Davis, J. (2010). *Young children and the environment, early education for sustainability*. Cambridge University Press.

Davis, J. M., & Gibson, M. (2006). Embracing complexity: creating cultural change through education for sustainability. *International Journal of Knowledge, Culture and Change Management*, 6(2), 93-102. <https://doi.org/10.18848/1447-9524/CGP/v06i02/49932>

- de Haan, G. (2010). The development of ESD-related competencies in supportive institutional frameworks. *International Review of Education*, 56, 315–328. <https://doi.org/10.1007/s11159-010-9157-9>
- DeCuir-Gunby, J. T., Marshall, P. L., & McCulloch, A. W. (2010). Developing and using a codebook for the analysis of interview data: An example from a professional development research project. *Field Methods*, 23(2), 136-155. <https://doi.org/10.1177/1525822x10388468>
- Dewey, J. (1938). *Education and Experience*. Simon and Schuster.
- Dietz, T., Fitzgerald, A., & Shwom, R. (2005). Environmental values. *Annual review of environment and resources*, 30, 335. <https://doi.org/10.1146/annurev.energy.30.050504.144444>
- Dinç, B. (2015). Okulöncesi eğitim kurumuna devam eden çocukların ebeveynlerinin çocuk hakları eğitimi konusundaki görüşleri. *Eğitimde Nitel Araştırmalar Dergisi*, 3(1), 7-25.
- Dresner, M.G., & Gill, M. (1994). Environmental education at summer nature camp. *Journal of Environmental Education*, 25(3), 35-41. <https://doi.org/10.1080/00958964.1994.9941956>
- Drexhage, J. & Murphy, D. (2010). Sustainable development: From Brundtland to Rio 2012. *United Nations Headquarters*.
- Elo, S. & Kyngas, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Elliot, S. (2010). Children's natural play. In Davis, J. M. (Ed.). *Young Children and the Environment: Early Education for Sustainability*. Cambridge University Press.
- Elliott, M. A., & Ainsworth, K. (2012). Predicting university undergraduates' binge-drinking behavior: A comparative test of the one-and two-component theories of planned behavior. *Addictive behaviors*, 37(1), 92-101. <https://doi.org/10.1016/j.addbeh.2011.09.005>
- Eppley, K. (2010). Picturing rural America: A analysis of the representation of contemporary rural America in picture books for children. *The Rural Educator*, 32(1), 1-10.

- Erdoğan, M., Marcinkowski, T., & Ok, A. (2009). Content analysis of selected features of K-8 environmental education research studies in Turkey, 1997-2007. *Environmental Education Research*, 15(5), 525-548. <https://doi.org/10.1080/13504620903085776>
- Erdoğan, M., Coşkun, E., & Uşak, M. (2011). Developing children's environmental literacy through literature: An analysis of 100 basic literary works. *Eurasian Journal of Educational Research*, 42, 45-62.
- Erdogan, M., & Marcinkowski, T. (2015). Development and validation of children's environmental affect (Attitude, sensitivity and willingness to take action) scale. *EURASIA Journal of Mathematics, Science and Technology Education*, 11(3). <https://doi.org/10.12973/eurasia.2015.1347a>
- Erer, A. (2015). *Yaybacaklı çocuklar*. Kumdan Kale Publishing.
- Escoffier, M. (2019). *İyi kalpli küçük tavşan*. Yapı Kredi Publishing.
- Fang, S. C. (2018). The influence of parental education on the environmental education of pre-schoolers: A case study of self-designed picture book. *Journal of Baltic Science Education*, 17(2), 187.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior. An introduction to theory and research*. Addison-Wesley.
- Forehand, M. (2005). Bloom's Taxonomy: Original and revised. In M. Orey (Ed.), *Emerging Perspectives on Learning, Teaching, and Technology*. https://textbookequity.org/Textbooks/Orey_Emergin_Perspectives_Learning.pdf
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (8th ed.). McGraw Hill Education.
- Francella, G. (2014). *Aaa! Hiç de korkunç değilmiş*. Boyut Publishing.
- Fuertes-Camacho, M. T., Graell-Martín, M., Fuentes-Loss, M., & Balaguer-Fàbregas, M. C. (2019). Integrating sustainability into higher education curricula through

the project method, a global learning strategy. *Sustainability*, 11(3), 767. <https://doi.org/10.3390/su11030767>

Georgalou, M. & Xadoulou, K. (2017). *Mevsimler*. (R. Rumi, Trans.). Aylak Kitap Publishing.

Ghigna, C. (2015). *Parkta oynuyorum temiz tutuyorum*. Almidilli Publishing.

Gliori, D. (2016). *Yaramaz ejderhalar*. (S. Atlıhan, Trans.). İş Bankası Kültür Publishing.

Goins, S. L. (2004). *Botany in children's literature: A content analysis of plant - centered children's picture books that have a plot and characters* (Publication No. 3136173) [Doctoral Dissertation, Louisiana State University and Agricultural & Mechanical College]. ProQuest Dissertations and Theses Global. <https://www.proquest.com/dissertations-theses/botany-childrens-literature-content-analysis/docview/305171829/se-2>

Goldman, D., Yavetz, B., & Pe'er, S. (2006). Environmental literacy in teacher training in Israel: Environmental behavior of new students. *Journal of Environmental Education*, 38(1), 3-22. <https://doi.org/10.3200/JOEE.38.1.3-22>

Goulgouti, A., Plakitsi, A., & Stylos, G. (2019). Environmental literacy: Evaluating knowledge, affect, and behavior of pre-service teachers in Greece. *Interdisciplinary Journal of Environmental and Science Education*, 15(1), e02202. <https://doi.org/10.29333/ijese/6287>

Göknül, C. (2017). *Dev tavşan*. Uçanbalık Publishing.

Gönen, M., Temiz, N., & Akbaş, S. C. (2015). The role and importance of children's libraries in early childhood: A library program sample. *Milli Eğitim Bakanlığı*, 1(208), 76–89.

Grbich, C. (2012). *Qualitative data analysis: An introduction*. SAGE Publications.

- Güzelyurt, T. & Özkan, Ö. (2019). Okul öncesi dönemde çevre eğitimi: Çocuk kitaplarına yönelik bir inceleme. *İlköğretim Online*, 18(1), 20-30. <https://doi.org/10.17051/ilkonline.2019.527146>
- Green, M., & Dymont, J. (2018). Wilding pedagogy in an unexpected landscape: reflections and possibilities in initial teacher education. *Journal of Outdoor and Environmental Education*, 21(3), 277-292. <https://doi.org/10.1007/s42322-018-0024-7>
- Gülay, H. & Ekici, G. (2010). MEB Okul Öncesi Programının çevre eğitimi açısından analizi. *Journal of Turkish Science Education*, 7(1), 74-84.
- Häggeström, M., & Schmidt, C. (2020). Enhancing children's literacy and ecological literacy through critical place-based pedagogy. *Environmental Education Research*, 26(12), 1729-1745. <https://doi.org/10.1007/s42322-018-0024-7>
- Hart, E.P. (1981). Identification of key characteristics of environmental education. *The Journal of Environmental Education*, 13(1), 12-16. <https://doi.org/10.1080/00958964.1981.9943018>
- Hart, P. (2002). Narrative, knowing, and emerging methodologies in environmental education research: Issues of quality. *Canadian Journal of Environmental Education*, 7(2), 140-165.
- Hart, C. & Eaves, E. (2018). *Ektiğim tohumdan dinazor çıktı!*. Pearson Publishing.
- Harvey, G. (1977). A conceptualization of environmental education. In J. Aldrich, A. Balckburn & G. Abel (Eds.), *A Report on the North American Regional Seminar on Environmental Education* (pp. 66-77).
- Hedefalk, M., Almqvist, J., & Östman, L. (2015). Education for sustainable development in early childhood education: A review of the research literature. *Environmental Education Research*, 21(7), 975-990. <https://doi.org/10.1080/13504622.2014.971716>
- Hines, J., Hungerford, H., & Tomera, A. (1986/87). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *The Journal of Environmental Education*, 18(2), 1-8. <https://doi.org/10.1080/00958964.1987.9943482>

- Hofman-Bergholm, M. (2018). Changes in Thoughts and Actions as Requirements for a Sustainable Future: A Review of Recent Research on the Finnish Educational System and Sustainable Development. *Journal of Teacher Education for Sustainability*, 20(2), 19-30.
- Hollweg, K. S., Taylor, J. R., Bybee, R. W., Marcinkowski, T. J., McBeth, W. C., & Zoido, P. (2011). *Developing a framework for assessing environmental Literacy*. North American Association for Environmental Education. <https://cdn.naace.org/sites/default/files/devframewkassessenvlitonlineed.pdf>
- Holshouser, K. O., & Medina, A. L. (2021). For a better world for all: teaching the sustainable development goals through trade books. *The Reading Teacher*, 74(4), 456-462. <https://doi.org/10.1002/trtr.1968>
- Honig, A. S., & Mennerich, M. (2013). What does 'go green' mean to children?. *Early Child Development and Care*, 183(2), 171-184. <https://doi.org/10.1080/03004430.2012.742993>
- Hsiao, C., & Shih, P. (2015). The impact of using picture books with preschool students in Taiwan on the teaching of environmental concepts. *International Education Studies*, 8(3), 14-13. <https://doi.org/10.5539/ies.v8n3p14>
- Hsiao, C., & Shih, P. (2016). Exploring the effectiveness of picture books for teaching youngchildren the concepts of environmental protection. *International Research in Geographical and Environmental Education*, 25(19), 36-49. <http://dx.doi.org/10.1080/10382046.2015.1106203>
- Hsu, S. J., & Roth, R. E. (1998). An assessment of environmental literacy and analysis of predictors of responsible environmental behaviour held by secondary teachers in the Hualien area of Taiwan. *Environmental education research*, 4(3), 229-249.
- Hu, L., Deng, W. J., Ying, G. G., & Hong, H. (2021). Environmental perspective of COVID-19: Atmospheric and wastewater environment in relation to pandemic. *Ecotoxicology and Environmental Safety*, 219, 112297. <https://doi.org/10.1016/J.ECOENV.2021.112297>
- Hungerford, H.R., & Peyton, R.B. (1977). A paradigm of environmental action. (ERIC Documentation Service ED137116).

- Hungerford, H. R., Peyton, R.B., & Wilke, R.J. (1980). Goals for curriculum development in environmental education. *The Journal of Environmental Education*, 11(3), 42-47. <https://doi.org/10.1080/00958964.1980.9941381>
- Hungerford, H.R., & Volk, T.L. (1990). Changing learner behavior through environmental education. *The Journal of Environmental Education*, 21(3), 8-22. <https://doi.org/10.1080/00958964.1990.10753743>
- Işıtan, S. (2016). Illustrated storybooks for preschool children published in Turkey between 1980-2013: A study based on preschool education reforms. *Educational Sciences: Theory & Practice*, 16(2). <https://doi.org/10.12738/estp.2016.2.2862>
- Jaafari, L. (2016). *Dünyanın en güzel yeri*. METU Press.
- Jones, C. (2018). *Safari Park'ta dev pancar çılgınlığı*. İndigo Publishing.
- Kals, E., & Maes, J. (2002). Sustainable development and emotions. *Psychology of sustainable development* (pp. 97-122). Springer.
- Kaptan F. (1999). *Fen bilgisi öğretimi*. Milli Eğitim Basımevi.
- Kaur, H. (2014). *Doğayı koru: Enerji tasarrufu*. (H. Üstünel, Trans.). Dört Göz Publishing.
- Kaur, H. (2014). *Doğayı koru: Küresel ısınma*. (H. Üstünel, Trans.). Dört Göz Publishing.
- Kelly, R., Evans, K., Alexander, K., Bettiol, S., Corney, S., Cullen-Knox, C., et al. (2021). Connecting to the oceans: supporting ocean literacy and public engagement. *Reviews in fish biology and fisheries*, 32(1), 123-143. <https://doi.org/10.1007/s11160-020-09625-9>
- Klein, S., Watted, S., & Zion, M. (2021). Contribution of an intergenerational sustainability leadership project to the development of students' environmental literacy, *Environmental Education Research*, 27(12), <https://doi.org/10.1080/13504622.2021.1968348>

- Kolb, D. (1984). *Experiential learning: experience as the source of learning and development*. Prentice-Hall.
- Koller, K. S. (2013). Portrayal of agriculture in children's literature: Contemporary stories in picture books, traditional tales, and nonfiction. *Graduate Research Papers*, 18. <https://scholarworks.uni.edu/grp/18>
- Kollmuss, A., & Agyeman, J. (2002). Mind the Gap: Why Do People Act Environmentally and What Are the Barriers to Pro-Environmental Behavior? *Environmental Education Research*, 8, 239- 260. <http://dx.doi.org/10.1080/13504620220145401>
- Kozikoğlu, T. (2013). Turkish delight: Sweet or sour?: the double face of the Turkish children's book market. *Bookbird: A Journal of International Children's Literature*, 51(2), 71-75.
- Köklü-Yaylacı, H. & Feriver, Ş. (2020). Erken çocukluk döneminde çevre eğitimi ve sürdürülebilir kalkınma için eğitim. In R. Olgan (Ed.), *Erken çocukluk döneminde çevre eğitimi* (pp.18-40). Pegem Akademi.
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd ed.). Sage Publications.
- Kuswendi, U., & Arga, H. S. P. (2020). Developing Primary School Students' Environmental Literacy by Utilizing Scraps. *Mimbar Sekolah Dasar*, 7(2), 198–215. <https://doi.org/10.17509/mimbar-sd.v7i2.26497>
- Lafay, A. & Boulanger, A. (2015). *Matis matematiği sevmiyor*. Yapı Kredi Publishing.
- Leal Filho, W. (Ed.). (2009). *Sustainability at universities: opportunities, challenges and trends*. Lang.
- Levy, A., Orion, N., & Leshem, Y. (2018). Variables that influence the environmental behavior of adults. *Environmental Education Research*, 24(3), 307-325. <https://doi.org/10.1080/13504622.2016.1271865>
- Liefländer, A. K., & Bogner, F. X. (2014). The effects of children's age and sex on acquiring proenvironmental attitudes through environmental education. *The Journal of Environmental Education*, 45(2), 105-117. <https://doi.org/10.1080/00958964.2013.875511>

- Liu, S. Y., Yeh, S. C., Liang, S. W., Fang, W. T., & Tsai, H. M. (2015). A national investigation of teachers' environmental literacy as a reference for promoting environmental education in Taiwan. *The Journal of Environmental Education*, 46(2), 114-132. <https://doi.org/10.1080/00958964.2014.999742>
- Lopez-Alcarria, A., Poza-Vilches, M. F., Pozo-Llorente, M. T., & Gutiérrez-Pérez, J. (2021). Water, waste material, and energy as key dimensions of sustainable management of early childhood eco-schools: An environmental literacy model based on teachers action-competencies (ELTAC). *Water (Switzerland)*, 13(2). <https://doi.org/10.3390/w13020145>
- Lysack, M. (2021). The Teach-in on Global Warming Solutions and Vygotsky: Fostering ecological action and environmental citizenship. *McGill Journal of Education*, 44(1), 119-134. <https://doi.org/10.7202/037775ar>
- Lynch-Brown, C. & Tomlinson, C. M. (1999). *Essentials of children's literature* (3rd ed.). Allyn & Bacon.
- MacQueen, K. M., McLellan, E., Kay, K., & Milstein, B. (1998). Codebook development for team-based qualitative analysis. *Cam Journal*, 10(2), 31-36. <https://doi.org/10.1177/1525822X980100020301>
- Madden, L., & Liang, J. (2017). Young children's ideas about environment: Perspectives from three early childhood educational settings. *Environmental Education Research*, 23(8), 1055-1071. <https://doi.org/10.1080/13504622.2016.1236185>
- Makki, M.H., Abd-el-Khalick, F., & Boujaoude, S. (2003). Lebanese secondary school students' environmental knowledge and attitudes. *The Journal of Environmental Education Research*, 9(1), 21-33. <https://doi.org/10.1080/13504620303468>
- Maloney, M. P., & Ward, M. P. (1973). Ecology: Let's hear from the people: An objective scale for the measurement of ecological attitudes and knowledge. *American Psychologist*, 28(7), 583-586. <https://doi.org/10.1037/h0034936>
- Manning, M., & Granström, B. (2017). *Mmm! Çok lezzetli-Besin zincirleri hakkında bir kitap*. Martı Publishing.

- Marcinkowski, T. (2001). Predictors of responsible environmental behavior: A review of three dissertation studies. In H. Hungerford, W. Bluhm, T. Volk and J Ramsey (Eds.), *Essential Readings in Environmental Education* (pp. 247-276). Stipes Publishing.
- Marcinkowski, T. (2006). *Analysis of the “forerunners” and their contributions*. [EDS5410 Course notes]. Foundations of Environmental Education. Department of Science and Math Education, Florida Institute of Technology, Melbourne, FL, USA.
- Marlow, E. (1998). Needed: Children’s literature on farming. *Journal of Instructional Psychology*, 25(4), 277-282.
- Marriott, S. (2002). Red in tooth and claw? Images of nature in modern picture books. *Children’s Literature in Education*, 33(3), 175-183. <https://doi.org/10.1023/A:1019677931406>
- Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., ... & Howes, C. (2008). Measures of classroom quality in prekindergarten and children’s development of academic, language, and social skills. *Child development*, 79(3), 732-749. <https://doi.org/10.1111/j.1467-8624.2008.01154.x>
- Meinhold, J. L., & Malkus, A. J. (2005). Adolescent Environmental Behaviors: Can Knowledge, Attitudes, and Self-Efficacy Make a Difference? *Environment and Behavior*, 37(4), 511–532. <https://doi.org/10.1177/0013916504269665>
- Merino, G. (2018). *Suyu sevmeyen krokodil*. Pearson Publishing.
- McBride, B. B., Brewer, C. A., Berkowitz, A. R., & Borrie, W. T. (2013). Environmental Literacy, ecological Literacy, ecoliteracy: What do we mean and how did we get here? *Ecosphere*, 4(5), art67. <https://doi.org/10.1890/es13-00075.1>
- McCrea, E. J. (2006). *Leading the way to environmental literacy and quality: national guidelines for environmental education*. Environmental Education and Training Partnership (EETAP).
- Mckee, D. (2016). *Elmer kar keyfi*. Mikado Publishing.
- Miles, M. B., & Huberman, A. M. (1994). *An expanded sourcebook: qualitative data analysis*. (2nd ed.). SAGE Publications.

- Ministry of National Education [MoNE]. (2013). Okul Öncesi Eğitim Programı. The curricula and regulation for early childhood education. Ankara.
- Morrone, M., Mancl, K., & Carr, K. (2001). Development of a metric to test group differences in ecological knowledge as one component of environmental literacy. *The Journal of Environmental Education*, 32(4), 33-42. <https://doi.org/10.1080/00958960109598661>
- Mummery, W. K., Spence, J. C., & Hudec, J. C. (2000). Understanding physical activity intention in Canadian school children and youth: An application of the theory of planned behavior. *Research quarterly for exercise and sport*, 71(2), 116-124. <https://doi.org/10.1080/02701367.2000.10608889>
- Muthukrishnan, R. (2019). Using picture books to enhance ecoliteracy of first-grade students. *The International Journal of Early Childhood Environmental Education*, 6(2), 19-41.
- Nash, R. (1976). Logs, universities, and the environmental education compromise. *The Journal of Environmental Education*, 8(2), 2-11.
- Negev, M., Sagy, G., Garb, Y., Salzberg, A., & Tal, A. (2008). Evaluating the environmental literacy of Israeli elementary and high school students. *The journal of environmental education*, 39(2), 3-20. <https://doi.org/10.3200/JOEE.39.2.3-20>
- Neuendorf, K. A. (2002). *The content analysis guide book*. Sage Publications.
- Niklas, F., Cohrssen, C., & Tayler, C. (2016). The sooner, the better. *SAGE Open*, 6(4), 1-11.
- Onur, A. , Çağlar, A. & Salman, M. (2016). 5 yaş okulöncesi çocuklarda atık kâğıtların değerlendirilmesi ve çevre bilincinin kazandırılması . *Kastamonu Eğitim Dergisi*, 24(5), 2457-2468.
- Osbaldiston, R. (2004). *Meta-Analysis of the responsible environmental behavior literature* (Publication No. 3144447) [Doctoral dissertation, University of Missouri- Columbia]. ProQuest Dissertations and Theses Global. <https://www.proquest.com/dissertations-theses/meta-analysis-responsible-environmental-behavior/docview/305158505/se-2>

- Oxlade, C. (2017). *Dinozorlar*. (S. Şen, Trans.). Almidilli Publishing.
- Önal, H., Kaya, N. & Çalışkan, T. (2019). Çevre eğitiminde sıfır atık politikası ve mevcut ders kitaplarındaki görünümü (Hayat bilgisi 2. sınıf ders kitabı). *Milli Eğitim Dergisi*, 48(221), 123-140
- Özkan, S. (2018). *Soso'nun kompost kitabı*. Redhouse Kidz Publishing.
- Özkan, B. & Tuğluk, M. N. (2020). 2013 Okul öncesi eğitim programının çevre eğitimi analizi. *Turkish Studies Education*, 15(3), 1991-1996. <https://dx.doi.org/10.29228/TurkishStudies.41743>
- Özyürek, M. (2017). *Yemişler*. Özyürek Publishing.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*, n71. <https://doi.org/doi:10.1136/bmj.n71>
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. (3rd ed.). Sage Publications.
- Pe'er, S., Goldman, D., & Yavetz, B. (2007). Environmental literacy in teacher training: Attitudes, knowledge, and environmental behavior of beginning students. *Journal of Environmental Education*, 39, 45-59. <https://doi.org/10.3200/JOEE.39.1.45-59>
- Pellai, A. & Tamborini, B. (2019). *Okula gitmek istemiyorum*. (B. Ulukan, Trans.). Turkuvaz Kitap Publishing.
- Penn, A. (2021). *Avucundaki öpücük*. (P. Savaş, Trans.). Butik Publishing.
- Peyton, RB & Miller, BA (1980). Developing an internal locus of control as a prerequisite to environmental action taking. *Journal of Environmental Education*, 18(2). 1-8.
- Piaget, J. (1977). *The development of thought: Equilibration of cognitive structures*. (Trans A. Rosin). Viking.

- Potter, G. (2010). Environmental education for the 21st century: where do we go now? *The Journal of Environmental Education*, 41(1), 22-33. <https://doi.org/10.1080/00958960903209975>
- Powers, A. L. (2004). Teacher preparation for environmental education: faculty perspectives on the infusion of environmental education into preservice method courses. *The Journal of Environmental Education*, 35(3), 3-11. <https://doi.org/10.3200/JOEE.35.4.17-32>
- Prabuddh, M. (2018). *Environmental Education as a driver for Sustainable Development Goals*, January 2022. Retrieved from <https://www.researchgate.net/publication/322835204>
- Presidential National Library (2020). Cumhurbaşkanlığı Millet Kütüphanesi. *Cumhurbaşkanlığı Yayınları*, 63,1. <https://mk.gov.tr/ContentFiles/a2020-0754-MilletKutuphanesi-TekTek.pdf>
- Preston-Gannon, F. (2018). *Eve yolculuk*. (E, Serdaroğlu-Daş, Trans.). Pötikare Publishing.
- Ptacek, B. (2016). Early Literacy and the Public Library: An Opportunity of a Lifetime (of Reading), *Public Library Quarterly*, 35(4), 338-343. <https://doi.org/10.1080/01616846.2016.1245007>
- Pulimeno, M., Piscitelli, P., & Colazzo, S. (2020). Children's literature to promote students' global development and wellbeing. In *Health Promotion Perspectives*, 10(1), 13-23. <https://doi.org/10.15171/hpp.2020.05>
- Purdie-Salas, L. (2017). *Taş dedikleri var ya*. (B.N. Zileli-Alkım, Trans.). TÜBİTAK Publishing.
- Ramsey, J.M. (1993). The effects of issue investigation and action training on eight-grade students' environmental behavior. *The Journal of Environmental Education*, 24(3), 31-36. <https://doi.org/10.1080/00958964.1993.9943501>
- Ramsey, J., & Rickson, R. (1977). Environmental knowledge and attitudes. *The Journal of Environmental Education*, 8(1), 10-18.

- Ratminingsih, N. M., Budasi, I. G., & Kurnia, W. D. A. (2020). Local culture-based storybook and its effect on reading competence. *International Journal of Instruction*, 13(2), 253-268.
- Richetin, J., Perugini, M., Conner, M., Adjali, I., Hurling, R., Sengupta, A., & Greetham, D. (2012). To reduce and not to reduce resource consumption? That is two questions. *Journal of Environmental Psychology*, 32(2), 112-122. <https://doi.org/10.1016/j.jenvp.2012.01.003>
- Rieckmann, M. (2017). *Education for sustainable development goals: Learning objectives*. UNESCO Publishing.
- Rogers, P., Jalal, K., & Boyd, J. (2008). *An introduction to sustainable development*. Earthscan.
- Roth, C.E. (1992). *Environmental Literacy: Its roots, evolution and directions in the 1990s*. ERIC/CSMEE Publications.
- Russell, D. L. (2001). *Literature for children: A short introduction* (4th ed.). Addison Wesley Longman.
- Sage, C. (1996). Population, poverty and land in the South. In P. Sloep & A. Blowers (Eds.), *Environmental policy in an international context: conflicts*. (pp. 98-125). Arnold.
- Saldana, J. (2021). *The coding manual for qualitative researchers*. Sage Publications.
- Sarı, T. (2019). *Çocuk kütüphanelerinde yer alan çocuk kitaplarının çocuk hakları açısından incelenmesi: Ankara ili örneği*. [Master thesis, Adnan Menderes University Social Sciences Institution]. YÖK Ulusal Tez Merkezi. <https://tez.yok.gov.tr/UlusalTezMerkezi/TezGoster?key=vjszP7PzV0HebcjFEvDfwCByqjrg2oNszZerk6h2M43FKSD716JodT0ugFRWJ1CH>
- Satija, M. (2013). *The theory and practice of the Dewey decimal classification system* (2nd ed.). Elsevier.
- Sato, M. (2006). *Evolving environmental education and its relation to EPD and ESD: Overview of the conceptual development based on a series of international discussion on environmental education*. A paper presented at the UNESCO Expert Meeting on Education for Sustainable Development (ESD):

Reorienting Education to Address Sustainability, 1-3 May 2006 at Kanchanaburi, Thailand.

Schleicher, A. (2012). *Preparing teachers and developing school leaders for the 21st century: Lessons from around the world*. OECD Publishing.

Schreier, M. (2012). *Qualitative content analysis in practice*. Sage Publications.

Scott, D., & Willits, F.K. (1994). Environmental attitudes and behavior: A Pennsylvania survey. *Environment and Behavior*, 26(2), 239-260. <https://doi.org/10.1177/001391659402600206>

Seçmen, E. (2012). *Su damlasının macera dolu yolculuğu*. Bulut Publishing.

Serres, A. (2020). *Çocuk olmaya hakkım var*. (F. Önen, Trans.). Yapı Kredi Publishing.

Sertbarut, M. (2017). *Emre ile Cemre 2: Doktor oluyor*. TUDEM Publishing.

Sertbarut, M. (2017). *Emre ile Cemre 4- Tarım yapıyor*. Tudem Publishing.

Shields, G. (2011). *Kitapkurdu Lily*. Kelime Publishing.

Shine, (1995). *Preschoolers' response to picture books in small-group discussions: The role of genre* (Publication No. 9534957) [Doctoral dissertation, Graduate School of the University of Texas]. ProQuest Dissertations and Theses Global. <https://www.proquest.com/dissertations-theses/preschoolers-response-picture-books-small-group/docview/304253321/se-2>

Simmons, D. (1998). Using natural settings for environmental education: perceived benefits and barriers. *The Journal of Environmental Education*, 29(3), 23-31. <https://doi.org/10.1080/00958969809599115>

Sivek, D.J., & Hungerford, H. (1990). Predictors of responsible behavior in members of three Wisconsin conservation organizations. *The Journal of Environmental Education*, 21(2), 35-40.

Sobel, D. (1996). *Beyond ecophobia*. Orion Society.

- Soltani, R., Sharifirad, G., Mahaki, B., & Eslami, A. A. (2018). Determinants of oral health behavior among preschool children: application of the theory of planned behavior. *Journal of Dentistry*, *19*(4), 273.
- Spearman, M., & Eckhoff, A. (2012). Teaching young learners about sustainability. *Childhood Education*, *88*(6), 354-359. <https://doi.org/10.1080/00094056.2012.741476>
- Stapp, W.B. (1978). Impressions on the first intergovernmental meeting on environmental education. *The Journal of Environmental Education*, *9*(2), 2-4. <https://doi.org/10.1080/00958964.1977.10801866>
- Strnad, B., & Hewitt, G.M. (2021). Reading a book through its cover: the importance of preserving visual and tactile information in children's and young adult literature in the academic library. *Collection Management*, *46*(3-4), 332-346. <https://doi.org/10.1080/01462679.2021.1907008>
- Swan, M. (1984). Forerunners of environmental education. In N. McInnis and D. Albrecht (Eds.). *What makes education environmental?* (pp. 4-20). Plexus Publishing.
- Şenci, A.E. (2018). *Doğanın sesi*. Ceylan Publishing.
- The North American Association for Environmental Education [NAAEE] (2004). Guidelines for the preparation and professional development of environmental educators. Retrieved from <http://resources.spaces3.com/5e156799-5cd9-406e-835d-748cce277ecf.pdf>
- The National Association of the Education of Young Children [NAEYC] (1996). NAEYC position statement: technology and young children: Ages three-eight [Electronic version]. *Young Children*, *10*, 11-16.
- Tilbury, D. (1994). The International Development of Environmental Education: A Basis for a Teacher Education Model?. *Environmental education and information*, *13*(1), 1-20.
- 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>

- Timur, B. , Yılmaz, Ş. & Timur, S. (2016). Çevre Okuryazarlığı İle İlgili 1992-2012 Yılları Arasında Yayımlanan Çalışmalarda Genel Yönelimlerin Belirlenmesi. *Mehmet Akif Ersoy Üniversitesi Eğitim Bilimleri Enstitüsü Dergisi* , 3(5), 22-41 . Retrieved from <https://dergipark.org.tr/en/pub/ebed/issue/22327/239287>
- Tung, C., Huang, C., & Kawata, C. (2002). The effects of different environmental education programs on the environmental behavior of seventh-grade students and related factors. *The Journal of Environmental Health*, 64(7), 24-29.
- United Nations Educational, Scientific and Cultural Organization [UNESCO] (1978). Final report: Intergovernmental Conference on Environmental Education Tbilisi (USSR) 14-26 October 1977. Paris: United Nations Education, Scientific and Cultural Organisation.
- UN General Assembly. (2012). *Resolution adopted by the General Assembly on 27 July 2012*. United Nations: Norfolk, VA, USA.
- UNESCO-UNEP (1990). The environmentally educated teacher: The priority of priorities? *Connect Environmental Education Newsletter*, 15(1), 1-8.
- UNESCO (1992). The Rio Declaration. Retrieved, January 26, 2022 from http://www.unesco.org/education/information/nfsunesco/pdf/RIO_E.PDF
- UNESCO (1997). International Conference Environment and Society: Education and Public Awareness for Sustainability; Declaration of Thessaloniki. Retrieved May 02, 2022 from http://ncseonline.org/ncseconference/2003/conference/thessaloniki_declaration.pdf
- UNESCO (2005). United Nations Decade of Education for Sustainable Development (2005-2014): International Implementation Scheme.
- UNESCO. (2010). Engineering: Issues, challenges, and opportunities for development. UNESCO.
- UNESCO. (2014). *Global citizenship education-preparing learners for the challenges of the twenty-first century (online)*. Accessed 16 February 16, 2022. <http://unesdoc.unesco.org/images/0022/002277/227729e.pdf>

- UNESCO. (2015). *Sustainable Development Goals*. <http://en.unesco.org/sdgs>
- UNICEF. (2020). COVID-19: Are children able to continue learning during school closures. *UNICEF, For Every Child*, 100, 17.
- UN Environment. (2019). *Global environment outlook-GEO-6: Healthy planet, healthy people*. Cambridge University Press.
- Ural, S. (2013). Okul öncesi çocuk kitaplarının tanımı. In M. Gönen, (Ed.). *Çocuk edebiyatı* (pp 33-56). Eğiten Kitap.
- Ürey M., & Aydın, M. (2014). İlköğretim fen ve teknoloji dersi programında yer alan çevre konularına yönelik bir program analizi. *Kafkas Eğitim Araştırmaları Dergisi*, 1(2), 7-20.
- Hoevenaars, K. & van Beijnen, J. (2015). *The proposed Cleopatra's Needle Forest Reserve Puerto Princesa, Palawan, Philippines*. Centre for Sustainability. <https://doi.org/10.13140/RG.2.2.35227.16163>
- Varoglu, L., Temel, S., & Yılmaz, A. (2017). Knowledge, attitudes and behaviours towards the environmental issues: Case of Northern Cyprus. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(3), 997-1004. <https://doi.org/10.12973/ejmste/81153>
- Verde, S. (2019). *Su prensesi*. (A. E. Esen, Trans.). Nar Çocuk Publishing.
- Verne, J. (2018). *Deniz altında yirmi bin fersah*. (Trans.). Beyaz Balina Publishing.
- Veziroğlu, M., & Gönen, M. (2012). Resimli çocuk kitaplarının MEB Okul Öncesi Eğitim Programı'ndaki kazanımlara uygunluğunun incelenmesi. *Eğitim ve Bilim*, 37(163).
- Volk, T., & McBeth, W. (1997). Environmental literacy in the Unites States: What should be...What is...Getting from here to there. A report funded by the U.S. Environmental Protection Agency and submitted to the Environmental Education and Training Partnership, NAAEE. Washington, DC: U.S. EPA.

- Wason-Ellam, L. (2010). Children's literature as a springboard to place-based embodied learning. *Environmental Education Research*, 16(3-4), 279-294. <https://doi.org/10.1080/13504620903549771>
- Wan, C., Shen, G. Q., & Yu, A. (2014). The role of perceived effectiveness of policy measures in predicting recycling behaviour in Hong Kong. *Resources, Conservation and Recycling*, 83, 141-151. <https://doi.org/10.1016/j.resconrec.2013.12.009>
- Weder, R. (2017). *Ekolojik mahalle*. Yeni İnsan Publishing.
- World Commission on Environment and Development [WCED] (1987). *Our Common Future*. Oxford: University Press.
- World Health Organization [WHO]. (2021). *The impact of COVID-19 on health and care workers: a closer look at deaths* (No. WHO/HWF/WorkingPaper/2021.1). World Health Organization.
- Wilson, R. A. (1993). Fostering a sense of wonder during the early childhood years. Retrieved from ERIC database. (ED449968)
- Wilson, R. A. (1996). Starting early: environmental education during the early childhood years. Retrieved from ERIC database. (ED402147)
- Wilson, R. (2010). Goodness of fit: good for children and good for the earth. In J. L. Hoot & J. Szente (Eds.), *The earth is our home children caring for the environment* (17-35). Association for Childhood Education International.
- Wong, C. A., Afandi, S. H. M., Ramachandran, S., Kunasekaran, P., & Chan, J. K. L. (2018). Conceptualizing environmental literacy and factors affecting pro-environmental behaviour. *International Journal of Business and Society*, 19(S1), 128-139.
- Wu, H., & Mweemba, L. (2010). Environmental self-efficacy, attitude and behavior among small scale farmers in Zambia. *Environment, Development and Sustainability*, 12, 727-744. <http://dx.doi.org/10.1007/s10668-009-9221-4>
- Yavetz, B., Goldman, D., & Pe'er, S. (2009). Environmental literacy of pre-service teachers in Israel: A comparison between students at the onset and end of their

studies. *Environmental education research*, 15(4), 393-415.
<https://doi.org/10.1080/13504620902928422>

Yılmaz, B. (2014). Public library system in Ankara: A quantitative analysis. *Journal of Ankara Studies*, 2(2), 115-130.

Yorek, N., Ugulu, I., Sahin, M., & Dogan, Y. (2010). A qualitative investigation of students' understanding about ecosystem and its components. *Natura Montenegrina*, 9(3), 973-981.

Yousefi, M. R. (2012). *Ay, yıldız ve ben*. (L. Gönül, Trans.). METU Press.

Yu, X. (2012). Exploring visual perception and children's interpretations of picture books. *Library & Information Science Research*, 34(4), 292-299.
<https://doi.org/10.1016/j.lisr.2012.06.004>

Zajonc, R. B. (2000). Feeling and thinking: Closing the debate over the independence of affect. In J. P. Forgas (Ed.), *Feeling and thinking: The role of affect in social cognition* (pp. 31–58). Cambridge University Press.

APPENDICES

A. APPROVAL OF THE METU HUMAN SUBJECTS ETHICS COMMITTEE

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER



ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

DUMLUPINAR BULVARI 06800
ÇANKAYA ANKARA/TURKEY
T: +90 312 210 22 91
F: +90 312 210 79 59
ueam@metu.edu.tr
www.ueam.metu.edu.tr

Sayı: 28620816 /

20 MAYIS 2022

Konu : Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi : İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Prof.Dr. Refika OLGAN

Danışmanlığınızı yürüttüğünüz Tuba ÖZGÜL'ün "4-6 Yaşındaki Çocuklara Yönelik Resimli Öykü Kitaplarında Çevre Okuryazarlığı'nın İncelenmesi" başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve **0315-ODTÜİAEK-2022** protokol numarası ile onaylanmıştır.

Saygılarımızla bilgilerinize sunarız.

Prof.Dr. Mine MISIRLIŞOY
İAEK Başkan

B. SAMPLE ITEMS FROM ENVIRONMENTAL LITERACY CODEBOOK

Environmental Literacy Codebook	
Item	Item Explanation/ Examples
A. Environmental Knowledge	
A.1. Ecological Knowledge	
6. Knowledge of food chain.	Includes the movement of energy and nutrients in the ecosystem. At the first level, there are plants (producers). After the herbivores eat the plants or the carnivores eat the herbivores, the energy is transmitted from one to the other. As a result, energy moves towards higher-level organisms. E.g., grass-grasshopper-mouse-eagle.
A.2. Cultural, Political, and Socio-Economic Knowledge	
11. Knowledge of cultural values or activities.	Includes the patterns of living and custom and implementation of rules and models for specific groups and populations. E.g., food, clothes, games, celebrations, songs.
A.3. Knowledge of Environmental Issues and Problems	
23. Knowledge of poverty.	Includes not having enough income to meet all or most of the daily basic needs. In particular, difficulty in accessing or being unable to access basic needs such as food, drink, shelter, and clothing.
B. Affective Dispositions toward the Environment	
28. Empathy with the environment.	Includes sharing feelings and emotions of elements in nature as if they were your own. For example, s/he thinks that if s/he pulls dog's tail, it will hurt the dog just like her/his own.
36. Environmental locus of control.	Includes perception about one's internal control (personal power) and external controls/powers over environmental issues. E.g., while someone thinks having no control/power over an earthquake, s/he

thinks control over the environmental pollution.

C. Environmentally Responsible Behaviors

C.1. Resource Management and Production

41. Working in agriculture.

Includes cultivation of the soil for the growing of crops, rearing of animals to provide food, wool, and other products, increasing the productivity, keeping the products in appropriate conditions, with the methods of traditional agriculture or sustainable agriculture.

C.2. Citizen Participation

46. Developing knowledge and competence in environmental issues.

Includes reading reports, book, magazines and news, taking courses related to nature and environmental issues, using media tools to get and share knowledge of environment.

D. Environmental Skills

48. Skill of investigating the environmental problem.

Includes asking 5W1H questions (what, who, where, when, why, how) related to the environmental problems, accessing information resources, exploring. E.g., children ask their teachers about why the lake was dirty and how it could be cleaned. They walk around the lake to see where the garbage was coming from.

52. Skill of evaluating the environmental solution.

Includes criticizing the consequences, advantages and disadvantages of the solution in regarding the environmental problem. E.g., children evaluate the current state of pollution in the lake and useful/useless aspects of their solutions.

C. PILOT STUDY PICTURE STORYBOOKS LIST

Publication Year	Publisher	Title
2017	İş Bankası Kültür Yayınları	Acıkmadım ki!
2013	Yapı Kredi Yayınları	Babaannem Kime Benziyor?
2016	Marsık Kitap	Bulut
2020	Yapı Kredi Yayınları	Çocuk Olmaya Hakkım Var
2018	Pötikare Yayınları	Eve Yolculuk
2015	Can Çocuk Yayınları	Kırmızı Fil'i Gördünüz Mü?
2015	Redhouse Kidz Yayınları	Korkak Kuş Sema
2017	Mavibulut Yayıncılık	Memo ve Ay
2017	Abm Çocuk ve İlk Gençlik Yayınları	Meşe Palamudunun Sihri
2016	İş Bankası Kültür Yayınları	Mutlu Suaygırı

D. MAIN STUDY PICTURE STORYBOOKS LIST

Publication Year	Publisher	Title
2018	Engin Yayınevi	19 Mayıs Yeniden Doğuş
2017	Yeşil Dinozor	5 Küçük Dinozor-Çatılı Stegozorus
2014	Boyut Yayın Grubu	Aaa! Hiç De Korkunç Değilmiş
2010	Mavi Bulut Yayıncılık	Aç Tırtıl
2017	Doğan Egmont Çocuk Kitapları	Ada Bale Gösterisinde
2018	H Yayınları	Adını Sevmeyen Kedi
2016	1001 Çiçek Kitaplar	Afacan Maymun Nasıl Yemek Yer
2016	Pearson Yayınları	Ağaca Tırmanan İnek
2015	Kırmızı Kedi Çocuk	Ağacın En Tepesinde
2020	Koç Üniversitesi Yayınları	Ağaçların Yetiştığı Bina
2018	ODTÜ Yayıncılık	Ah Hasta Oldum
2013	Nar Çocuk	Akıllı Tavşan
2018	Özyürek Yayınevi	Akide Şekeri
2015	Yumurcak Yayınları	Alaaddin ve Kurnaz Büyücü
2018	Yapı Kredi Yayınları	Aleks Çok Hassas
2017	Elma Yayınevi	Alexander ve Oyuncak Fare
2015	Ankara Yıldırım Dağıtım- Yayınevi Genel Dizisi	Ali Baba'nın Çiftliği
2017	1001 Çiçek Kitaplar	Altın Kaz
2018	Pearson Yayınları	Ama Bu Okulda Uzaylı Var
2017	Mavi Bulut Yayıncılık	Anahtar
2016	Yapı Kredi Yayınları	Anais Çok Kızgın
2015	Multibem Yayınları	Anne Çiçeği
2018	Say Çocuk	Anne Kedi ve Yavruları
2013	Yapı Kredi Yayınları	Annemin Çantası
2015	Dört Göz Yayınları	Arda Başkalarıyla Kıyaslanınca Sinirleniyor
2017	Arkadaş Yayıncılık- Çocuk Kitapları Dizisi	Arı Maya
2016	Çilek Kitaplar	Arılar ve Çiçekler
2019	İş Bankası Kültür Yayınları	Arkadaşım Astronot
2019	İş Bankası Kültür Yayınları	Arkadaşım Makinist
2017	Günışığı Kitaplığı	Aslı Pazarı Bekliyor

2018	Yeşil Dinozor	Astronot Kutup Ayısı
2017	Eğiten Kitap	Asya'nın Küçük Ormanı
2014	Boyut Yayın Grubu	Aşık Kelebek
2012	Mandolin	Aşk Böceği
2012	Kaknüs Yayınları	Atakan Dişlerini Fırçalamaya Alışıyor
2012	ODTÜ Yayıncılık	Atasay
2011	ODTÜ Yayıncılık	Ateş Böceği ile El Feneri
2021	Butik Yayınevi	Avucundaki Öpücük
2016	Erdem Çocuk	Ay Nereye Kayboldu
2012	ODTÜ Yayıncılık	Ay, Yıldız ve Ben
2018	Beta Kids	Ay'ın Gittiği Gece
2017	1001 Çiçek Kitaplar	Ayakları Üşüyen Penguen
2014	Altın Kitaplar- Çocuk Kitapları Dizisi	Ayasofya'nın Hazineleeri
2016	Yapı Kredi Yayınları	Ayça'nın Yeni Evi
2018	Kelime Yayınları	Ayı Masalı
2018	Beyaz Balina Yayınları	Ayı Yürüyüşe Çıkardım
2018	1001 Çiçek Kitaplar	Ayıcık Teşekkür Ediyor
2017	Doğan Egmont Çocuk Kitapları	Aylin Anneanneyle Bir Gün
2018	Yapı Kredi Yayınları	Ayyy... Ay
2010	Pia Yayınları	Az Ye Az Ye
2018	Eksik Parça Çocuk	Babaannenin Sürprizi
2020	Düşün Yayınevi	Babam Amazon Ormanlarında
2013	Nar Çocuk Yayınları	Babamı Özlüyorum
2019	Yapı Kredi Yayınları	Babamın Battaniyesi
2014	Kuraldışı Yayınları	Babasının Prensesi
2019	Doğan Egmont Çocuk Kitapları	Bach- Şatoda Üç Saat
2016	Altın Kitaplar	Bahçıvan Köstebek ve Günebakan Çiçeği
2017	Elma Yayınevi	Balköpüğü Tatlı Bir Sürpriz
2015	İstanbul Büyükşehir Belediyesi (Kültür A.Ş.) Yayınları	Baloncu Kirpi
2019	Damla Yayınevi	Bambi
2014	Timaş Çocuk	Bambi (Çocuk Klasikleri)
2018	1001 Çiçek Kitaplar	Banyo Yapmak İstemeyen Zürafa
2014	Doğan Çocuk	Barbie, Hayvanat Bahçesi Veterineri
2019	Doğan Egmont Çocuk Kitapları	Bay Hapşırık
2015	Düşizi Yayınları	Bay Huysuz ile Son Salyangoz

2018	Taze Kitap	Bay Ka Buk ve Ejder
2018	Doğan Egmont Çocuk Kitapları	Bay Küt
2018	Doğan Egmont Çocuk Kitapları	Bay Mutlu
2017	Çizmeli Kedi	Bay Sınırlı
2018	Bilgi Yayınevi	Bayan Şeftali ve Alya Gökkuşuğu Yapıyorlar
2018	Bilgi Yayınevi	Bayan Şeftali ve Alya Kayıp Yumurtaları Arıyorlar
2018	Bilgi Yayınevi	Bayan Şeftali ve Alya Tanışıyorlar
2017	Hep Kitap	Beatrice ve Vanessa
2015	Mandolin	Bebekler, Kahramanlar ve Bezden Toplar
2017	Artemis Çocuk	Beklenmedik Kahraman
2017	İş Bankası Kültür Yayınları	Ben Bir Dinozor Gördüm Galiba
2017	Yeşil Dinozor	Ben Ebe Olmam
2017	Parıltı Yayınları	Ben Kimim? Dinozor
2016	Uçanbalık Yayınları	Ben Ne Zaman Büyüyeceğim?
2012	ODTÜ Yayıncılık	Ben ve Arkadaşlarım
2019	Altın Kitaplar	Benden Bir Tane Daha Olsa
2014	Uçan Fil	Beni Taklit Etme!
2018	Meav Yayıncılık	Beni Yine De Sever Misin
2018	Altın Kitaplar	Benim Adım... Galileo Galilei
2017	Dört Göz Yayınları	Benim Duygusal Dünyam 7- Umutluyum
2019	Timaş Çocuk Yayınları	Benim Evim Nerede?
2010	Um:Ag Yayınları	Benim Güzel Palyaçom
2017	Kırmızı Kedi Kitabevi	Benim Kırmızı Arabam
2018	Pötikare Yayınları	Benim Yuvam Nerede?
2015	TÜBİTAK Yayınları	Berke'nin Down Sendromu Hikayesi
2017	Can Çocuk Yayınları	Beşimiz
2015	TUDEM Yayınları	Bil Bakalım Seni Ne Kadar Seviyorum
2016	Neziher- Çocuk Kitapları Dizisi	Bilge Arı ve Devedikeni
2017	1001 Çiçek Kitaplar	Billie'nin Hayvan Hastanesi Macerası
2017	1001 Çiçek Kitaplar	Billie'nin Su Altı Macerası
2012	Yeni Umut Yayınları	Bilmeceli Uyku
2020	A7 Kitap	Bin Ağaç

2011	1001 Çiçek Kitaplar	Bino'ya Bir Hediye
2021	Koç Üniversitesi Yayınları	Bir Ağaç Ol
2016	Beta Kids	Bir Daha
2017	Nobel Çocuk	Bir Dahaki Sefer Ay'ı Gördüğünde
2012	1001 Çiçek Kitaplar	Bir Kalyonun Öyküsü
2018	Nesin Yayınevi	Bir Kedi Olsaydım
2017	Çınar Yayınları	Bir Penguenin Dertleri
2013	1001 Çiçek Kitaplar	Bir Şehrin Öyküsü
2019	Haydi Kitap	Bir Yolcu Tohum
2017	Redhouse Kidz Yayınları	Bisiklet Ustası
2013	Nar Çocuk Yayınları	Bisikletim
2016	Doruk Yayınları	Bize Bir Tatlı
2017	Minimo	Bizim Değerlerimiz-Saygılı Olmak İstiyorum
2015	1001 Çiçek Kitaplar	Bobo Bisiklet Kazası
2015	Erdem Çocuk	Bobo Masal Dizisi 7-Farklı Olmak Güzel
2012	Erdem Çocuk Yayınları	Bobo Okula Başlıyor
2018	Nesin	Boşluk
2019	Yapı Kredi Yayınları	Böğürtlen Cini ve Sarı Gaga
2015	Uçanbalık Yayınları	Bu Bir Kitap
2017	Hedef Cs Yayıncılık	Bu Gürültü De Ne
2019	Yapı Kredi Yayınları	Bu Kış Kimse Üşümeyecek
2018	Çakıl	Bu Nedir? Eşyalar
2018	İş Bankası Kültür Yayınları	Bu Ses De Ne
2017	Düş Gemisi	Bugün Benim Doğum Günüm
2018	Artemis Çocuk	Burcu ile Berk- Yabancılar
2019	Timaş Çocuk Yayınları	Burcu Küsmek İşe Yarıyor Mu
2018	Timaş Çocuk Yayınları	Burcu Oyuncakları Toplamak Kimin Görevi?
2017	Meav Yayıncılık	Bücür Bora
2018	Özyürek Yayınevi	Bülbül'ün Şarkısı
2014	Mandolin	Bütün Oyuncaklar Benim
2019	Redhouse Kidz Yayınları	Büyük Sevbeni
2018	Pötikare Yayınları	Büyük Sır
2016	Aylak Kitap	Büyük Sözcük Fabrikası
2018	Can Çocuk Yayınları	Büyükanne ve Miyop Ejderha
2016	İş Bankası Kültür Yayınları	Büyükannem Bir Yıldız

2017	Uçanbalık Yayıncılık- Güzel Dünyamıza Masallar Dizisi	Cadı Burunlu Fabrika
2011	Yuva Yayınları	Can Dostum
2019	Yapı Kredi Yayınları	Canım Arkadaşlarım
2017	Redhouse Kidz Yayınları	Canını En Çok Ne Yakar
2019	Kuraldışı Yayınları	Carl ve Yaşamın Anlamı
2015	TÜBİTAK Yayınları	Cem'in Disleksi Hikayesi
2014	Kaknüs Yayınları	Cemile Annemle Babam Kızmamış
2014	Kaknüs Yayınları	Cemile Arkadaşına Yardım Ediyor
2014	Kaknüs Yayınları	Cemile Bahçeyi Keşfediyor
2014	Kaknüs Yayınları	Cemile Banyo Yapmak İstemiyor
2014	Kaknüs Yayınları	Cemile Bir Hata Yapıyor
2014	Kaknüs Yayınları	Cemile Çişini Altına Yapıyor
2014	Kaknüs Yayınları	Cemile Doktora Gidiyor
2014	Kaknüs Yayınları	Cemile Geceyi Teyzesinde Geçiriyor
2014	Kaknüs Yayınları	Cemile Hastanede Yatıyor
2014	Kaknüs Yayınları	Cemile Kâbus Görüyor
2014	Kaknüs Yayınları	Cemile Midilliye Biniyor
2014	Kaknüs Yayınları	Cemile Okula Dönüyor
2014	Kaknüs Yayınları	Cemile Okula Gitmek İstemiyor
2014	Kaknüs Yayınları	Cemile Oyuncaklarını Paylaşmak İstemiyor
2014	Kaknüs Yayınları	Cemile Uyumak İstemiyor
2014	Kaknüs Yayınları	Cemile ve Arkadaşı Prenses Elbisesi Giyiyor
2014	Kaknüs Yayınları	Cemile Yüzmeyi Öğreniyor
2014	Kaknüs Yayınları	Cemile'nin Kardeşi Oluyor
2018	Parıltı Yayınları	Cesaret
2015	Timaş Çocuk	Cesur Terzi ve Dev
2015	Ensar Neşriyat	Cesur Yavru Fil
2012	Çilek Kitaplar	Cici Çocuklar- Saygılı Tırtıl
2015	Polat Kitapçılık	Cici Kızlar- Hayal Kurmak
2017	Özyürek Yayınevi	Cingöz'ün Oyunu
2018	Bulut Yayınları	Cömert Ağaç
2018	Eksik Parça Çocuk	Cumartesi Günlerinin Rengi ve Kokusu

2018	İş Bankası Kültür Yayınları	Çarli Maytap ve En Sevdiği Kitap
2013	Altın Kitaplar	Çevreci Dostlar- Ormanı Kaybeden Kahverengi Geyik
2017	Doğan Egmont Çocuk Kitapları	Çılgın Hırsız 3- Agnes Tek Boynuzlu Atları Seviyor!
2017	Martı Çocuk Yayınları	Çiçi'nin Oyuncakları
2019	İş Bankası Kültür Yayınları	Çiftlik Öyküleri- Sürpriz Ziyaretçiler
2017	Uçanbalık Yayınları	Çikolata Çocuk
2021	Damla Yayınevi	Çikolata Ev
2011	Uçanbalık Yayınları	Çikolata Masalları- 2 Fasulye Motorlu Uçan Daire
2016	Doğan Egmont Çocuk Kitapları	Çilek Kız Hikâye Kitapları- Değerli Hazine
2017	Redhouse Kidz Yayınları	Çilli
2015	Ferfir Yayınları	Çintirik ile Pintirik Diş Fırçalıyor
2015	Ferfir Yayınları	Çintirik Çevreyi Düzenliyor
2017	Sırtlan Kitap	Çu'nun Okuldaki İlk Günü
2012	Timaş Çocuk Yayınları	Çufçufklar Minik Dostum
2017	Özyürek Yayınevi	Dalgın Mehmet
2018	Çilek Kitaplar	Davete Katılmak
2017	Doğan Çocuk	Davetsiz Misafir Rehberi
2017	İş Bankası Kültür Yayınları	Dedektif Can ve Kayıp Kurabiye Olayı
2018	Final Kültür Sanat Yayınları	Dedemin Bisikleti- Çiftlikte Bir Gün
2018	Final Kültür Sanat Yayınları	Dedemin Bisikleti- Yağmurdan Sonra Gökkuşığı
2018	Kırmızı Kedi- Okul Öncesi Dizisi	Değerler Eğitimi Serisi 7- Ayı ve Arılar
2012	Can Çocuk Yayınları	Değirmenci ile Baykuş
2019	Hep Kitap	Değişim Sever Bay Flux
2016	İş Bankası Kültür Yayınları	Demir Yolu Çocukları
2018	Beyaz Balina Yayınları	Deniz Altında Yirmi Bin Fersah
2018	Kırmızı Kedi Çocuk	Deniz'in Sevdiği Şeyler 6- Yoğurt
2016	1001 Çiçek Kitaplar	Denize Açılan Fare
2021	Yumurcak Yayınları	Denizin Sesleri
2015	Sarıgaga Yayınları	Denizkızı ve Aşık Devler

2017	Uçanbalık Yayınları	Dev Tavşan
2017	Yapboz Yayın	Dev ve Kuş
2016	Pearson Yayınları	Dikkat! Bu Kütüphanede Ejderha Var!
2015	Ankara Yıldırım Çocuk Yayınları	Dikkatsiz Yoyo
2016	Net Çocuk Yayınları	Ding Dong Kim Gelmiş
2017	Damla Çocuk	Dinozor Çağı
2017	Damla Yayınevi	Dinozor Çağı Çöl Macerası
2011	Timaş Çocuk Yayınları	Dinozor Ferro ile Tanışalım
2017	Pegasus Çocuk Yayınları	Dinozor Yumurtası
2017	Almidilli Yayınları	Dinozorlar
2018	Beyaz Balina Yayınları	Dinozorlar Okula Nasıl Gider
2018	Beyaz Balina Yayınları	Dinozorlar Yemeklerini Nasıl Yer
2012	Timaş Çocuk	Dinozorların Peşinde
2015	Doğan Egmont Çocuk Kitapları	Disney Karlar Ülkesi Kış Sonu Festivali
2015	Doğan Egmont Çocuk Kitapları	Disney Karlar Ülkesi Kutlama
2016	Doğan Egmont Çocuk Kitapları	Disney Kayıp Balık Dori
2016	Gelengi Yayınları	Diş Fırçalamak Yasak
2016	Redhouse Kidz Yayınları	Dodo'nun Komik Karışimleri
2016	Çilek Yayınları	Doğa ve Sen
2018	Ceylan Çocuk	Doğanın Sesi
2014	Dört Göz Yayınları	Doğayı Koru- Enerji Tasarrufu
2014	Dört Göz Yayınları	Doğayı Koru- Küresel Isınma
2018	Parıltı Yayınları	Doğruyu Söyle
2014	Yeşil Dinozor	Doğum Günü Dileği
2010	Boyut Yayın Grubu	Doğum Gününe Davetlisiniz
2017	Altın Kitaplar	Doğum Günün Kutlu Olsun Guzi!
2014	Final Kültür Sanat Yayınları	Doktor Ayı
2018	Hep Kitap	Dombili Veterinere Gidiyor
2017	Doruk Yayınları	Dost Canavarlar
2017	Arpa Kitap	Dört Kafadar Güneşi Yerine Asıyor
2017	Martı Çocuk Yayınları	Dünya Bebeklerle Dolu!
2016	Pötikare Yayınları	Dünyamızı Isıtan Sarı Güneş
2017	Nobel Çocuk	Dünyamızın Yaşam Alanları
2016	ODTÜ Yayıncılık	Dünyanın En Güzel Yeri
2017	1001 Çiçek Kitaplar	Dünyanın Merkezine Yolculuk
2017	Kırmızı Kedi Çocuk	Dünyanın On Dört Günü

2016	1001 Çiçek Kitaplar	Düşünce Okuyan Kız Noona
2017	Caretta Çocuk	Efe ile Bulut
2016	Erdem Çocuk Yayınları	Efe ile Ece Büyüyor Evde
2016	Erdem Çocuk	Efe ile Ece Büyüyor Öğreniyor- Misafirlikte
2017	Tudem Yayınları	Eğlenceli Notalar
2018	1001 Çiçek Kitaplar	Eğri Büğrü
2015	Yapı Kredi Yayınları	Ejderhalar Da Tuvalete Gider Mi?
2015	1001 Çiçek Kitaplar	Ejderhaya Çörek
2018	Elips Kitapları	Ekin-Çiftlikte İlk Gün
2017	Yeni İnsan Yayınevi	Ekolojik Mahalle
2018	Pearson Yayınları	Ektiğim Tohumdan Dinozor Çıktı
2015	TÜBİTAK Yayınları	Elektriğin Yolculuğu
2016	İş Bankası Kültür Yayınları	Elif Alışverişe Gidiyor
2016	İş Bankası Kültür Yayınları	Elif Dağ Gezisinde
2019	İş Bankası Kültür Yayınları	Elif ile Kedisi Mırnav
2016	İş Bankası Kültür Yayınları	Elif Kuaförde
2016	İş Bankası Kültür Yayınları	Elif Müzisyen
2018	İş Bankası Kültür Yayınları	Elif Tatile Gidiyor
2016	İş Bankası Kültür Yayınları	Elif'in Bahar Bayramı
2015	TÜBİTAK Yayınları	Elimde Değil- Tourette Sendromu
2016	Yapı Kredi Yayınları	Eliza Başarısız Olmaktan Korkuyor
2014	Boyut Yayın Grubu	Elma Kurdunun Evi
2016	Mikado Yayınları	Elmer
2016	Mikado Yayınları	Elmer Kar Keyfi
2016	Mikado Yayınları	Elmer Rüzgârda
2016	Mikado Yayınları	Elmer ve Büyükbaba Eldo
2016	Mikado Yayınları	Elmer ve Gül
2016	Mikado Yayınları	Elmer ve Wilbur
2016	Mikado Yayınları	Elmer Zıtlıklar
2017	Tudem Yayınları	Emre ile Cemre 10- Başbakan Oluyor
2018	Tudem Yayınları	Emre ile Cemre 2- Kedili Takvim Yapıyor
2017	Tudem Yayınları	Emre ile Cemre 6- Korkuluk Yapıyor
2017	Tudem Yayınları	Emre ile Cemre 7- Doktor Oluyor

2018	Tudem Yayınları	Emre ile Cemre 8- Kermeste
2017	Tudem Yayınları	Emre ile Cemre Tarım Yapıyor
2021	Redhouse Kidz Yayınları	En Güzel Bahçe
2013	Caretta Çocuk	En Yakın Arkadaşım Uzaylı
2016	Kara Karga Yayınları	Enise- Yeşil Misafirler
2014	TÜBİTAK Yayınları	Erken Çocukluk Kitaplığı: Doktorda
2017	ODTÜ Yayıncılık	Eski Ev Yeni Ev
2018	Eğiten Kitap	Ev İçi Demokrasi
2020	Ema Çocuk	Ev Köpeği ile Kurt
2017	Pearson Yayınları	Evimde Bir Aslan Var
2012	O2 Yayıncılık	Ezgi Korsanlara Karşı
2017	Can Çocuk Yayınları	Fare Adlı Kedi
2019	Desen Yayınları	Fare ile Dağ
2018	Timaş Çocuk Yayınları	Fareli Köyün Kavalcısı
2017	ODTÜ Yayıncılık	Fil, Kelebek ve Kuş
2017	Çankaya Yayın Dağıtım	Filcan Hayvanat Bahçesinde
2014	Gergedan Yayınevi	Flips Olanları Anlamıyor
2018	Timaş Çocuk Yayınları	Fokun Yavrusu
2010	Beyaz Balina Yayınları	Franklin'in Sürprizi
2018	1001 Çiçek Kitaplar	Gauguin Arkadaşım Paul
2015	Vakvak Yayınları	Gazoz Çeşmesi
2021	1001 Çiçek Kitaplar	Gece Maymunu Gündüz Maymunu
2017	Parıltı Yayınları	Gergedan
2021	Uçan Fil	Geri Dönüşüm Ülkesi
2015	Ferfir Yayınları	Gezegenlerin Öğretmeni Güneş
2017	Kırmızı Kedi Çocuk	Gezgin Bulut ve Küçük Kırmızı Valiz
2016	Yapı Kredi Yayınları	Gezgin ile Kartanesi Komutan Karınca'nın Evinde
2017	Eğiten Kitap	Gökkuşuğu Balıkları
2016	Yapı Kredi Yayınları	Gökkuşuğunu Kovalayan Kedi
2018	Çilek Yayınları	Gökkuşuğunu Yutan Dinozor
2015	Almidilli Yayınları	Görünmek İstemeyen Küçük Hayalet
2018	Yumurcak Yayınları	Görünmez Dinozorlar
2015	Yapı Kredi Yayınları	Greg'in Zaferleri
2017	Yapı Kredi Yayınları	Guguklu Saatin Küçük Kuşu
2018	Timaş Çocuk	Gül Anne

2017	Çankaya Yayın Dağıtım	Gülce ile Filcan'ın Maceraları- Filcan Afrika'da
2016	Altın Kitaplar- Çocuk Kitapları Dizisi	Gülücük Renkli Kelebek
2011	1001 Çiçek Kitaplar	Gülümse Lütfen, Bino
2017	Top Yayınları	Gülüş Rüzgârın Bir Bildiği Var
2020	Doku Aes Okul Öncesi Yayınları	Gümüş Fil Mamut Oldu
2016	Potikare Yayınları	Güneş
2016	Siyah Beyaz Yayınları	Güneş Çocuklar Ülkesinde
2019	Yapı Kredi Yayınları	Güneşin Doğmak İstemediği Gün
2017	Beta Kids Yayınları	Güneşin Gittiği Gün
2012	Pegasus Çocuk Yayınları	Güney Çayırı
2015	Uçan Fil Yayınları	Güvercin Otobüs Kullanmasın
2011	Form Bilişim Yayınları	Güzellik Yarışması
2020	Taze Kitap Yayınları	Hadi Ormana Gidelim
2014	İş Bankası Kültür Yayınları	Hareketli Gün
2014	İş Bankası Kültür Yayınları	Hareketli Hayvanlar
2014	İş Bankası Kültür Yayınları	Hareketli İnşaat
2014	İş Bankası Kültür Yayınları	Hareketli İtfaiye
2014	İş Bankası Kültür Yayınları	Hareketli Kumsal
2014	İş Bankası Kültür Yayınları	Hareketli Lunapark
2014	İş Bankası Kültür Yayınları	Hareketli Oyun Saati
2014	İş Bankası Kültür Yayınları	Hareketli Oyuncaklar
2014	İş Bankası Kültür Yayınları	Hareketli Park
2014	İş Bankası Kültür Yayınları	Hareketli Şehir
2014	İş Bankası Kültür Yayınları	Hareketli Tren
2014	İş Bankası Kültür Yayınları	Hareketli Yılbaşı
2016	Çilek Kitaplar	Hastaları Ziyaret Etmek
2017	İş Bankası Kültür Yayınları	Havalimanında Bir Gün
2018	Timaş Çocuk Yayınları	Hayalleri Sevmeyen Kral
2014	Boyut Yayın Grubu	Hayallerim Gerçek Olsa: Dev Bir Pastada Yaşam Nasıl Olurdu?
2017	Doğan Egmont Çocuk Kitapları	Hayat Dersleri- Ev Alma Komşu Al!
2020	Hep Kitap- Çocuk Kitapları Dizisi	Haydar Paşa'nın Evi
2014	Dört Göz Yayınları	Haydi Paylaşalım
2016	Mavi Bulut Yayıncılık	Hayır Hayır Bana Ne!

2016	Eksik Parça Çocuk	Hayvanat Bahçesindeki Arkadaş
2018	1001 Çiçek Kitaplar	Hazırım-Sakinleş Öfkeli Hayal Kırıklığına Uğramış ve Üzgün
2018	Çocuk Gezegeni	Hazine Sandığı
2018	Doğan ve Egmont Yayıncılık-Çocuk Kitapları Dizisi	Hello Kitty- Rengarenk Bir Gün
2018	Redhouse Kidz Yayınları	Hep Fazlasıdır Annem
2017	Edam	Hep Yanımda
2016	ODTÜ Yayıncılık	Hepimiz Seniniz
2016	1001 Çiçek Kitaplar	Her Şeye Hayır Diyen Aslan
2017	1001 Çiçek Kitaplar	Hiç Hata Yapmayan Kız
2018	İndigo Çocuk	Hokus Pokus Diplodokus Dünyanın İlk Sihirbazı
2015	Almidilli Yayınları	Hoş Geldin İlkbahar
2015	1001 Çiçek Kitaplar	Huysuzozor Hatice
2018	Meav Yayıncılık	Işık Demetinde Bir Albert Einstein Hikayesi
2015	Edam Yayınları	İglo'ya Bir Kuş Konmuş
2012	Nar Çocuk Yayınları	İki Kafadar Smoofy & Biboo Yaralı Kartala Yardım
2015	Uçanbalık Yayınları	İki Kavgacı Ağaç
2018	Top Yayıncılık	İki Vagon Boş Kaldı
2017	Redhouse Kidz Yayınları	İkimiz De Seni Çok Seviyoruz
2017	Beta Yayınları National Geographic Kids	İlk Dinozor Kitabım
2018	Altın Kitaplar- Çocuk Kitapları Dizisi	İlkbahar- Elma Çiçeği Yarışı
2017	Sıfırdan Yayınları	İnci Tanesi
2019	İş Bankası Kültür Yayınları	İnci Yabancılarla Gitmez
2021	Sola Kidz	İnci'nin Düşü
2015	Uçanbalık Yayınları	İp Bacaklı Uzaylı Çocuk
2015	TÜBİTAK Yayınları	İpek Yeni Şeyler Üretiyor
2010	Kök Yayıncılık	İskelet ve Kemikler
2017	Altın Kitaplar	İstanbul'da Harika Bir Gün
2017	Nemesis Çocuk	İyi Ejderha & Kötü Ejderha
2018	1001 Çiçek Kitaplar	İyi Geceler Ayı Kardeş
2019	Yapı Kredi Yayınları	İyi Geceler Bozi
2015	Artemis Çocuk	İyi Geceler Sam
2019	Yapı Kredi Yayınları	İyi Kalpli Küçük Tavşan

2020	İş Bankası Kültür Yayınları	İyilik
2016	1001 Çiçek Kitaplar	Jack ve Fulufulu Ağacı
2017	Çamlıca Çocuk Yayınları	Jet Motorlu Mürekkep Balığı
2014	Yapı Kredi Yayınları	Jülyet'e Kardeş Geliyor
2017	Özyürek Yayınevi	Kadife Piliç
2018	TÜBİTAK Yayınları	Kadim Orman
2019	İş Bankası Kültür Yayınları	Kâğıt Bebekler
2015	Kuraldışı Yayınları	Kahraman Bisikletimle Tertemiz Kentim
2015	Ensar Neşriyat	Kahraman Farecik
2017	1001 Çiçek Kitaplar	Kahraman Olmak İsteyen Tavşan
2016	Artemis Çocuk	Kampın Prensesi
2012	Kırmızı Kedi Çocuk	Kaplumbağa ile Eşek
2018	Mor Elma Yayıncılık	Kaplumbağa Teri
2015	Edam	Kaplumbağa ve Kazlar
2015	Yapı Kredi Yayınları	Kaplumbağalı Adam Osman Hamdi Bey
2011	Birleşik Yayınları	Kaplumbağanın Sancısı
2012	Yeni Umut Yayınları	Kaptan Musto
2017	Net Çocuk Yayınları	Kaptan Spagetti Sayı Yiyen Canavarlar
2012	Yeni Umut Yayınları	Kar Perisi
2018	Özyürek Yayınevi	Kara Boncuk'un Bayramı
2019	Nar Çocuk Yayınları	Karagöz Amca Uçurtma Şenliğinde
2017	Özyürek Yayınevi	Karakoyunun Yavruları
2015	Mikado Yayınları	Karanlık'la Dans
2014	Dört Göz Yayınları	Kararlıyım- Benim Duygusal Dünyam 1
2017	Özyürek Yayınevi	Karbeyaz'ın Arkadaşları
2011	Kuzey Yayınları	Kardeşim Solucan
2017	Kırmızı Kedi Çocuk	Karganın Eskici Dükkânı
2019	Timaş Çocuk Yayınları	Karlar Kraliçesi
2017	Doğan Egmont Çocuk Kitapları	Karlar Ülkesi İz Peşinde: Sihirli Kuzey Işıkları
2018	O2 Yayıncılık	Karya'nın Kırmızı Ceketini
2012	İthaki Yayınları	Kayıp Şey
2018	Erdem Çocuk	Kedi ile Fareler
2017	ODTÜ Yayıncılık	Kedi ve Yıldızlar
2017	Redhouse Kidz Yayınları	Kedim Nereye Kayboldu
2017	İş Bankası Kültür Yayınları	Kediş'in Armağanı

2016	Redhouse Kidz Yayınları	Kelebeklerin Yolculuğu
2019	Altın Kitaplar	Kelime Koleksiyoncusu
2017	Erdem Çocuk Yayınları	Keloğlan Suskunlar Ülkesinde
2015	Nar Çocuk Yayınları	Keloğlanın Sevinci
2017	TÜBİTAK Yayınları	Kendim Olmaktan Mutluyum
2020	Ema Çocuk	Kendini Beğenen Geyik
2018	Bulut Yayınları	Kertenkele Tatil Köyüne Hoş Geldiniz
2011	Bulut Yayınları	Kınalı Keklik
2016	Yeşil Dinozor	Kırık Oyuncaklar Dükkanı
2018	Elma Çocuk	Kırlangıcın Uyarısı- Ezop Masalları
2017	Çilek Kitaplar	Kırmızı Araba
2021	Uçan Fil	Kırmızı Balon Uçuyor
2018	Özyürek Yayınevi	Kırmızı Bilye
2010	Kök Yayıncılık	Kırmızı Düğmenin Düşü
2012	Eğiten Çocuk	Kırmızı Etek
2018	Timaş Çocuk Yayınları	Kırmızı Gemi Neden Gitti?
2012	Yapı Kredi Yayınları	Kırmızı Kanatlı Baykuş
2017	Mandolin Yayınları	Kırmızı Kurdele Mavi Papyon 3- Küstüm
2013	Altın Kitaplar	Kırmızı Paletli Timsah
2018	Uçan Fil Yayınları	Kırmızı Saçlı Kız Şarkı Söylüyor
2010	ODTÜ Yayıncılık	Kırmızı Top
2019	Doku Aes Okul Öncesi Yayınları	Kırmızı Traktör ile Beyaz Araba
2011	Nilüfer Yayıncılık	Kış Papatyaları
2018	İş Bankası Kültür Yayınları	Kıvırcık Çok Cesur Gece Yarısı Süper Kahramanı
2016	ODTÜ Yayıncılık	Kız, Oğlan ve Uçurtma
2018	Erdem Çocuk	Kibritçi Kız
2019	Yapı Kredi Yayınları	Kim Korkar Kırmızı Başlıklı Kızdan?
2017	Uçanbalık Yayınları	Kimin Yatağı Uçuyor
2021	Genç Tuti Yayınları	Kiraz Çekirdeği
2016	Kırmızı Kedi Çocuk	Kirpi ve Balonlar
2017	Redhouse Kidz Yayınları	Kirpi ve Sergi
2015	1001 Çiçek Kitaplar	Kıskançozor Kerem
2011	Kelime Yayınları	Kitapkurdu Lily
2011	Kuzey Çocuk Yayınları	Kocaman Bir Şehirdeyim En Sevdiğim Yerdeyim

2017	Can Çocuk Yayınları	Kocaman Küçük Deniz
2015	1001 Çiçek Kitaplar	Korkakozor Kamber
2018	Çilek Kitaplar	Korsan Kornı
2015	1001 Çiçek Kitaplar	Korsanlara Pizza
2017	Hep Kitap	Koyunlar Kralı
2015	Düşizi Yayınları	Köfte Pilav
2017	İş Bankası Kültür Yayınları	Köyde Bir Yıl
2016	Çocuk Gezegeni	Kral Midas
2012	Nar Çocuk Yayınları	Kralın Ödülü
2017	Caretta Çocuk	Kristof Kolomb Gibi Cesaretli Olabilirsin
2010	Elma Yayınevi	Kurbağa ve Karınca
2017	Edam	Kurbağa Zıpgöz
2017	Martı Çocuk Yayınları	Kurt Olmak İsteyen Kuzu
2017	Remzi Kitabevi	Kurt Oyunu Oynayalım Mı?
2017	Mavi Bulut Yayıncılık	Kurt, Ördek ve Fare
2017	Martı Çocuk Yayınları	Kusursuz Dost
2015	Polat Kitapçılık	Kuş Olmak İsteyen Uçak
2017	Final Kültür Sanat Yayınları	Kuşlar
2018	Caretta Çocuk	Kuşlar, Vahşi Hayvanlar ve Yarasa
2010	Altın Kitaplar- Çocuk Kitapları Dizisi	Kutup Hayvanları
2019	Yapı Kredi Yayınları	Küçük Ayı ile Ahlat Ağacı
2018	Doğan Egmont Çocuk Kitapları	Küçük Bayan Yardımsever
2018	Kayalıpark Çocuk	Küçük Bulut
2018	Özyürek Yayınevi	Küçük Cambaz
2016	1001 Çiçek Kitaplar	Küçük Deniz Kızı
2015	Yol Çocuk	Küçük Fu
2017	Beyaz Balina Yayınları	Küçük Gece Kedisi
2015	Pegasus Çocuk Yayınları	Küçük Karga Kendine İsim Seçiyor
2015	Martı Çocuk Yayınları	Küçük Korsanlar
2018	Özyürek Yayınevi	Küçük Köşk
2016	Edam	Küçük Lokomotif- Öz Güven
2018	Abm Yayınevi	Küçük Prens
2018	Pearson Yayınları	Küçük Vak Vak Yeni Arkadaş
2018	Dinozor Çocuk	Künüf'ü Kim Teselli Edecek
2017	Final Kültür Sanat Yayınları	Kütüphane Faresi
2013	Meav Yayıncılık	Laika Astronot Köpek
2017	Meav Yayıncılık	Leo Bir Hayalet Hikayesi

2017	Sokak Kitapları Yayınları	Lili'nin Dünya Seyahatı
2014	Mikado Yayınları	Louis'in Yendiği Gün
2016	1001 Çiçek Kitaplar	Lulu ve En Güzel Pasta
2018	Hep Kitap- Çocuk Kitapları Dizisi	Madeline Finn ile Kütüphane Köpeği
2019	Yapı Kredi Yayınları	Malena'nın Aynası
2013	Yapı Kredi Yayınları	Mantova'nın Cüceleri
2011	Final Kültür Sanat Yayınları	Maria Hissediyor
2018	1001 Çiçek Kitaplar	Marslılara Şekerleme
2017	İş Bankası Kültür Yayınları	Maskeli Fare
2018	Doğan Egmont Çocuk Kitapları	Maşa ile Koca Ayı- Gizemli Yumurta
2016	Doğan ve Egmont Yayıncılık- Çocuk Kitapları Dizisi	Maşa ile Koca Ayı Okula Başlıyor
2015	Yapı Kredi Yayınları	Matis Matematiği Sevmiyor
2018	Hep Kitap- Çocuk Kitapları Dizisi	Mavi Balina'nın Mavi Şarkıları
2017	1001 Çiçek Kitaplar	Mavi Yaz Kitabım
2016	Pearson Yayınları	Maya Dünyanın En Şanssız Köpeği
2018	Yapı Kredi Yayınları	Maymun Kral
2016	1001 Çiçek Kitaplar	Maymun ve Ben
2019	İş Bankası Kültür Yayınları	Meltem ile Uras Matematiği Keşfediyor
2018	Doğan Egmont Çocuk Kitapları	Meraklı ve Sürpriz Ziyaretçi
2016	Abm Yayınevi	Mercan'ın Kırmızı Saçları
2016	Çilek Kitaplar	Meslekler- Aşçı Hamham
2016	Çilek Kitaplar	Meslekler- Gazeteci Bambum
2016	Çilek Kitaplar	Meslekler: Çiftçi Mumu
2017	Aylak Kitap	Mevsimler
2017	Remzi Kitabevi	Miffy Okula Gidiyor
2017	Mandolin	Milo'nun Maceraları 5: Milo'nun Yıldıztozu Kumbarası
2012	Lal-Çocuk Kitaplar Dizisi	Mine'nin Küçük Dünyası Yıldızlar Sirki
2016	Kuraldışı Yayınları	Mini Ev Köpeği Olma Rehberi
2016	İş Bankası Kültür Yayınları	Minik Alice Harikalar Diyarında
2017	1001 Çiçek Kitaplar	Minik Ayıcıklar Okula Gidiyor
2015	İndigo Kitap	Minik İtfaiyeci
2017	1001 Çiçek Kitaplar	Minik Mavi

2019	İş Bankası Kültür Yayınları	Minik Salyangoz Pepe ile Dev Balina Zeze
2013	Çamlıca Çocuk Yayınları	Minik Tavşan Pikniğe Gidiyor
2016	Çamlıca Çocuk Yayınları	Minik Tavşan ve Çizgiler
2018	Final Kültür Sanat Yayınları	Misafir
2017	Martı Çocuk Yayınları	Mmm! Çok Lezzetli Besin Zincirleri Hakkında Bir Kitap
2015	1001 Çiçek Kitaplar	Murat Bey ve Işıltı Hanım
2017	ODTÜ Yayıncılık	Mutlu Kaplumbağa
2018	Uçan Fil	Mühendis Yağmur Deniz
2015	İş Bankası Kültür Yayınları	Mükemmel Oyuncak Ev
2013	Artemis Çocuk	Müzedede Macera Tom ve Jerry
2015	Çilek Yayınları	Nasıl Canavar Oldum
2018	Parıltı Yayınları	Nasıl Elektrik Tasarrufu Yaparız?
2013	Akçağ Yayınları	Nasreddin Hoca 6- Kimin İçi Yanıyor?
2012	ODTÜ Yayıncılık	Ne İstiyorsun Sevgili Salyangoz?
2016	Çocuk Gezegeni Yayınevi	Nele Diyor Ki: Yabancılarla Hiçbir Yere Gitmem
2016	Çocuk Gezegeni Yayınevi	Nele Odasını Topluyor
2016	Çocuk Gezegeni Yayınevi	Nele Trenle Yolculuğa Çıkıyor
2016	Çocuk Gezegeni Yayınevi	Nele Uyumak İstemiyor
2016	Çocuk Gezegeni Yayınevi	Nele ve Abisi Kavga Ediyor
2016	Çocuk Gezegeni Yayınevi	Nele Yılbaşını Bekliyor
2016	Çocuk Gezegeni Yayınevi	Nele, Klara'da Kalıyor
2015	Redhouse Kidz Yayınları	Nerede Bu Fil
2018	Beta Kids	Nerede Bu Muzlar
2018	İş Bankası Kültür Yayınları	Neredesin Küçük Tavşan?
2012	Pegasus Çocuk Yayınları	Neşeli Ayaklar 2-Yavrular Nerede?
2016	Kır Çiçeği Yayınları	Neyse Ki, Ne Yazık Ki
2019	Altın Kitaplar	Nokta
2018	Timaş Çocuk Yayınları	Noktacık
2017	Pearson Yayınları	Norton ve Alfa
2015	Kuşak Yayınları	Obur Arı
2018	Uçan Fil	Obur Ejderhalar 2
2021	1001 Çiçek Kitaplar	Okula Gitmek İstemeyen Zebra

2019	Turkuvaz Kitap	Okula Gitmek İstemiyorum
2019	TÜBİTAK Yayınları	Okulda İlk Günüm
2017	Redhouse Kidz Yayınları	Orion ve Karanlık
2018	Final Kültür Sanat Yayınları	Orman Kalpli Şehir
2017	Remzi Kitabevi	Orman Kitabı
2017	ODTÜ Yayıncılık	Orman Partisi
2015	Okuyan Koala	Orman Yangını ve Tilki
2018	Teleskop Popüler Bilim	Ormanda Bir Yıl
2018	İş Bankası Kültür Yayınları	Ormanın Kitabı
2016	Büyülü Fener Yayınları	Orq Ateşi Buldu
2013	İş Bankası Kültür Yayınları	Oyuncu Susam
2017	İş Bankası Kültür Yayınları	Oz Büyücüsü
2013	Yeşil Dinozor	Öğrenme Güçlüğünü Nasıl Yendim?
2016	Günışığı Kitaplığı	Öpücük Ne Renktir
2018	Caretta Çocuk	Palavracı Gezgin
2017	TÜBİTAK Yayınları	Pamuk Çocuk
2019	1001 Çiçek Kitaplar	Pamuk Prenses
2021	Uçanbalık Yayınları	Panço Kendine İnsan Arıyor
2010	Nesin Yayınevi	Papağanın Diriliş Öyküsü
2020	Çamlıca Çocuk Yayınları	Papatya ve Küçük Kelebek
2015	Almidilli	Parkta Oynuyorum Temiz Tutuyorum
2018	Özyürek Yayınevi	Parlak Tüy
2020	Pötikare Yayınları	Parlak Yıldız
2017	Beyaz Balina Yayınları	Parmak Çocuk
2017	Mandolin	Pasaklı Pembe'nin Muhteşem Dönüşü
2017	Büyük Düşler	Patazor
2017	İki A Yayıncılık	Pati Devriyesi- Skye Yüksek Uçuyor
2015	Uçan Fil	Pati Kedi Pati Kedi Beyaz Ayakkabılarını Çok Seviyor
2015	Uçan Fil	Pati Kedi ve Yılbaşı Macerası
2017	Eğiten Kitap	Penguenler Uçabilir Mi?
2014	İnkılap Kitabevi	Pepee Kalbim Kırıldı (İlk Öykülerim Serisi)
2014	1001 Çiçek Kitaplar	Periler Cömertliği Anlatıyor
2014	1001 Çiçek Kitaplar	Periler Dayanışmayı Anlatıyor
2010	Damla Yayınevi	Peter Pan
2017	İş Bankası Kültür Yayınları	Petunya Paris'in Papağanı
2020	Elma Yayınevi	Pezzetino

2014	Marsık Kitap	Pınar ile Çakıl'ın Maceraları- Çabuk Odanı Topla
2015	Marsık Kitap	Pınar ile Çakıl'ın Maceraları- Çakıl'ın Yeni Arkadaşı
2015	Marsık Kitap	Pınar ve Çakıl'ın Maceraları- Küçük Balıkçılar
2015	Marsık Kitap	Pınar ve Çakıl'ın Maceraları- Küçük Tiyatrocular
2019	İş Bankası Kültür Yayınları	Pırtık ve Tekir
2019	Beyaz Balina Yayınları	Pig Adında Bir Pug
2010	Uçanbalık Yayınları	Piknik Yapıyoruz
2015	Alef	Pilot ile Küçük Prens
2018	Kumdan Kale	Pinçik Keskindiş
2018	Yapı Kredi Yayınları	Piraye'nin Bir Günü
2019	Eksik Parça Çocuk Yayınevi	Pisi Pisi ve Doğum Günü
2017	Eksik Parça Çocuk	Pisi Pisi ve Fare Bıdık
2017	Yeşil Dinozor	Pisi ve Misi Kayboluyor
2018	Çınar Yayınları	Pistaçyo
2016	1001 Çiçek Kitaplar	Portakal Armut Elma ve Ayı
2018	Elma Yayınevi	Poşetto
2018	Redhouse Kidz Yayınları	Pöti'nin Gri Dişi
2017	Beta Kids	Prensesler Asla Durmaz
2017	Abm Yayınevi	Rada ve Şakacı Şövalye
2017	1001 Çiçek Kitaplar	Rapunzel
2016	Uçanbalık Yayınları	Reklamları Çizen Çocuk
2016	Tudem Yayınları	Renk Cüceleri
2010	Boyut Yayın Grubu	Renkler-Britannica Keşif Kütüphanesi
2016	ODTÜ Yayıncılık	Renkli Dilekler Uçurtması
2017	ODTÜ Yayıncılık	Renkli Kalemler ve Ben
2021	İthaki Yayınları	Renkli Sokak
2017	1001 Çiçek Kitaplar	Ressam Frida Kahlo ile Diego Rivera
2018	Çilek Yayınları	Ressam Robot Robi
2017	Hep Kitap	Rikki'nin Doğum Günü
2018	Doğan Egmont Çocuk Kitapları	Sadece Sen ve Ben
2018	İndigo Çocuk	Safari Parkta Dev Pancar Çılgınlığı
2017	Kumdan Kale	Sakalını Taşıyan Adam
2018	Martı Çocuk Yayınları	Saklambaç
2017	Erdem Çocuk Yayınları	Saklanın Mandarin Geliyor

2017	İş Bankası Kültür Yayınları	Sanço ve Yüz Bir Kemik
2016	Nail Kitabevi	Sansarlar
2016	Yapı Kredi Yayınları	Sara'ya Fındık Yok
2017	Mikado Yayınları	Sarı Civeiv
2015	Uçan Fil	Sarı Can Pijama Partisinde
2016	Artemis Çocuk	Scooby-Doo! Çiftlikteki Hayalet
2010	Remzi Kitabevi	Selin Uçurtma Yarışmasında
2015	Yapı Kredi Yayınları	Sem Okulu Sevmiyor
2015	Redhouse Kidz Yayınları	Sen Bir Robot Değilsin
2012	1001 Çiçek Kitaplar	Sen Yıldız Tozusun
2016	Pötikare Yayınları	Senin Sesin Hangisi
2017	Özyürek Yayınevi	Serçecik ile Tomurcuk
2019	Marsık Kitap	Sesini Arayan Oscar
2018	Okuyan Koala	Sessizlik
2018	1001 Çiçek Kitaplar	Sevgi Canavarı ve Mükemmel Hediye
2017	Erdem Çocuk	Sevgiyi Görmek
2016	ODTÜ Yayıncılık	Sevimli Cüceler
2017	Dört Göz Yayınları	Seviyorum
2010	Altın Kitaplar- Çocuk Kitapları Dizisi	Sıcak Ülke Hayvanları
2018	Nesin Yayınevi	Sıradan Bir Okul Günü
2017	İletişim Yayıncılık	Sırası Mı Şimdi!
2015	Mercek Çocuk	Sihirli Balık
2018	Meav Yayıncılık	Sihirli İplik
2017	Mavi Bulut Yayıncılık	Sihirli Kitap
2020	Yapı Kredi Yayınları	Sihirli Toz
2017	Uçan Fil	Sinek Astrid Müziği Keşfediyor
2016	Martı Çocuk Yayınları	Siri ve Pasaklı Misafir
2010	ODTÜ Yayıncılık	Somurtkan Kaplumbağa
2018	Altın Kitaplar- Çocuk Kitapları Dizisi	Sonbahar- Küçük Kırıntının Büyük Macerası
2016	Top Yayıncılık	Sonunculuk Madalyası
2018	Redhouse Kidz Yayınları	Soso'nun Kompost Kitabı
2015	Artemis Çocuk	Stella Orman Perisi
2012	Bulut Yayınları	Su Damlasının Macera Dolu Yolculuğu
2019	Nar Çocuk Yayınları	Su Prensesi
2016	Büyülü Fener Yayınları	Su Samuru Uzayda
2017	Kırmızı Kedi Çocuk	Suların Sessizliği

2018	Pearson Yayınları	Suyu Sevmeyen Krokodil
2017	1001 Çiçek Kitaplar	Süper Kahraman Ben Karanlıktan Korkmaz
2018	Pearson Yayınları	Süper Patates-3 Kaçak Bezelyenin Dönüşü
2016	Martı Çocuk Yayınları	Süper Sekizler- Sevginin Gücü
2017	Mavi Bulut Yayıncılık	Süpermöö Dünyayı Nasıl Kurtardı?
2010	ODTÜ Yayıncılık	Şarkı Söyleyemeyen Cırcır Böceği
2021	Doku Aes Okul Öncesi Yayınları	Şarkıcı Kurbağalar
2017	Timaş Çocuk	Şefik- Kim Korkar Okuldan
2019	TÜBİTAK Yayınları	Şehirdeki Son Ağaç
2011	Kelime Yayınları	Şekiller Ülkesi
2021	Parıltı Yayınları	Şekilli Hayvanlar Serisi- Stegosaurus
2013	Gnr Kitap	Şirinler Şirin Senfoni
2013	Gnr Kitap	Şirinler Uzun Uyku
2019	Erik Yayınları- Çocuk Kitapları Dizisi	Şule Karavanda Portakal
2014	Redhouse Kidz Yayınları	Şuşu, Can ve Dörtteker
2018	Nesil Çocuk Yayınları	Tali Büyüklerinin Elini Tutuyor
2013	Nesil Çocuk Yayınları	Tali Odasını Topluyor
2017	Nesil Çocuk Yayınları	Tali Sorumluluğunu Öğreniyor
2018	Caretta Çocuk	Tarla Kuşu ve Yavruları
2017	TÜBİTAK Yayınları	Taş Dedikleri Var Ya
2016	1001 Çiçek Kitaplar	Taş Devri Bebeği
2017	Doğan Egmont Çocuk Kitapları	Tatlış'ın Yağmurlu Günü
2012	Çilek Kitaplar- Masal Dizisi	Tavşan ile Kurbağa
2015	Sarıgaga Yayınları	Tavşan Terliklerim
2011	Nilüfer Yayıncılık	Tavşanların Ziyafeti
2010	Mandolin	Telefonda Nasıl Davranmalıyız
2010	Nar Yayınları	Tembel Kaz
2016	Beta Kids	Temiz
2010	Mandolin	Temizlik Sağlıktır
2016	Yapı Kredi Yayınları	Teo Artık İyi Görünüyor
2017	Uçanbalık Yayınları	Terlikleri Kim Giyecek?
2011	Bulut Yayınları	Tımbıl Tırtıl ve Arılar Kraliçesi
2016	Top Yayıncılık	Tınmaz- Bilinmeyen Çukurlar

2018	Yapı Kredi Yayınları	Tibo Tabletine Yapıştı
2017	Martı Çocuk Yayınları	Tik Tak
2017	İş Bankası Kültür Yayınları	Tilki Fred ve Yaban Dünya
2018	Özlem Yayınevi	Tilki ile Ayı Yavruları
2017	Final Kültür Sanat Yayınları	Tim'le Bir Gün
2017	Eksik Parça Çocuk Yayınevi	Tintin'in Yavruları
2017	Artemis Yayınları	Tom ve Jerry- Bu Kitap Bir Peynir Parçası Değil!
2013	Artemis Yayınları	Tom ve Jerry Evde Macera
2017	Pearson Yayınları	Tombik Ayı Teşekkür Ediyor
2017	Pearson Yayınları	Tombik Ayı'nın Dişi Sallanıyor
2018	Ema Çocuk	Tombik Ormanda
2016	Pearson Yayınları	Tombul Ayı Sayılar
2017	Beta Kids	Tombul Tavuk Eve Dönüş Yolculuğu
2010	Özyürek Yayınevi	Tombul'un Yaramazlığı
2018	Özyürek Yayınevi	Tonton'un Şapkası
2010	Marsık Kitap	Top Tip- Bugün Benim Doğum Günüm
2016	Eksik Parça Çocuk	Tren Thomas Geliyor
2018	İş Bankası Kültür Yayınları	Tuhaf Bir Gün
2017	Doğan ve Egmont Yayıncılık-Çocuk Kitapları Dizisi	TY Yeni Bir Yuva Buluyor
2018	Günışığı Kitaplığı	Uç Uç Böceği Bon Bon
2017	ODTÜ Yayıncılık	Uçan Balık
2011	Turkuvaz Kitap	Uçmak İstiyorum
2017	Okuyan Koala	Uçup Giden Battaniye
2016	Yapı Kredi Yayınları	Ufak ile Tefek
2018	Nesin Yayınevi	Unutkan Mumi
2010	Bilgi Kültür Sanat	Uslu Dur Baydur
2019	İş Bankası Kültür Yayınları	Utangaç Ayı Monti
2016	1001 Çiçek Kitaplar	Uyan Lydia Lou
2016	Günışığı Kitaplığı	Uykusunu Arayan Çocuk
2016	Almidilli	Uyuyan Güzel
2016	Beta Kids	Uzaylılar Don Sever
2015	Kırmızı Kedi	Uzun Burun Bingo
2018	Can Çocuk Yayınları	Uzun Yeleli Kedi Çocuk
2017	Doğan Egmont Çocuk Kitapları	Üç Arkadaş
2018	Özyürek Yayınevi	Üç Fare
2019	Yapı Kredi Yayınları	Üç Kedi Bir Canavar

2021	Yapı Kredi Yayınları	Üç Kedi Bir Dilek
2017	Timaş Çocuk Yayınları	Üç Kedicik ile Bir Ejderha
2016	Yumurcak Yayınları	Üç Tüy
2014	Boyut Yayın Grubu	Üff, Keşke Kardeşim Olsa
2015	Edam	Vahaya Bir Kuş Konmuş
2017	1001 Çiçek Kitaplar	Valentine ve Koca Ayı
		Yağmur
		Ormanında
2017	İş Bankası Kültür Yayınları	Vini ile Vilbur
2018	İş Bankası Kültür Yayınları	Vini ile Vilbur ve Ejderha
2017	İş Bankası Kültür Yayınları	Vini ile Vilbur ve Kötü Şövalye
2017	İş Bankası Kültür Yayınları	Vini ile Vilbur ve Uçan Süpürge
2014	İş Bankası Kültür Yayınları	Vini ile Vilbur ve Yaramaz Robot
2017	Erdem Çocuk	Yağız'ın Doğum Günü
2019	Redhouse Kidz Yayınları	Yağmur Adam ve En Güzel Dans
2019	Yapı Kredi Yayınları	Yağmurlu Bir Gün
2016	İş Bankası Kültür Yayınları	Yaramaz Ejderhalar
2016	Yapı Kredi Yayınları	Yaramaz Fareler
2011	Nilüfer Yayıncılık	Yaramaz Kardeşler
2017	Özyürek Yayınevi	Yaramaz Keçi
2017	İş Bankası Kültür Yayınları	Yaramaz Sırma ile Ayıcıklar
2018	1001 Çiçek Kitaplar	Yardımsever Cara
2013	Eğiten Çocuk	Yaşlı Fil ve Lir Kuşu
2017	Martı Çocuk Yayınları	Yatağın Altında Ne Var
2021	Yapı Kredi Yayınları	Yavru Ahtapot Olmak Çok Zor
2015	Kumdan Kale	Yay Bacaklı Çocuklar
2017	İş Bankası Kültür Yayınları	Yayazula
2019	İş Bankası Kültür Yayınları	Yayazula'nın Çocuğu
2017	Altın Kitaplar- Çocuk Kitapları Dizisi	Yaz- Yüzme Dersi
2010	Kaknüs Yayınları	Yaz Yağmuru
2019	Beyaz Balina Yayınları	Yazı Yazan İnekler
2013	Mandolin	Ye Ye Bitmiyor!
2019	Aydede Yayınları	Yedi Oğlak
2017	Özyürek Yayınevi	Yemişler
2018	Say Çocuk	Yeni Kardeş
2018	İndigo Çocuk	Yeni Kütüphaneci
2018	Eksik Parça Çocuk	Yeraltından Gelen Renk

2020	Çamlıca Çocuk Yayınları	Yeryüzü Masalları 8- Kutup Ayısı Kuto ve Balık
2011	Nilüfer Yayıncılık	Yeşil Kurbağa ve Sarı Nilüfer
2013	1001 Çiçek Kitaplar	Yeti ile Spagetti
2019	Elma Yayınevi	Yüzyüz
2017	Flamingo Çocuk	Zaman Krallığı
2016	Ankara Yıldırım Çocuk Yayınları	Zeynep'in Okul Maceraları 11- Aşından Hiç Korkmam
2016	Ankara Yıldırım Çocuk Yayınları	Zeynep'in Okul Maceraları 17- Mevsimlere Göre Giyinirim
2013	TUDEM Yayınları	Zeytin Okula Gitmek İstemiyor
2015	Yapı Kredi Yayınları	Zoe Zor Öğreniyor
2016	İş Bankası Kültür Yayınları	Zogi
2021	Yapı Kredi Yayınları	Zuzu Çöplükte
2013	Kaynak Yayınları	Zürafadan Kanguruya Neler Neler Var Bu Kitapta
2020	Beta Kids	Zürafalar Dans Edemez

E. TURKISH SUMMARY/TÜRKÇE ÖZET

GİRİŞ

Gelecek nesillere daha iyi bir çevre bırakmanın önemini vurgulamak için ünlü bir anonim atasözü “Dünya’yı atalarımızdan miras almıyoruz; çocuklarımızdan ödünç alıyoruz.” der (Hoevenaars ve van Beijnen, 2015, s.2). Fakat günümüz çocukları küresel ısınma (Lysack, 2021), iklim değişikliği (Akitsu ve Ishihara, 2018), yoksulluk (Tilbury, 1995), kirlilik (Kuswendi ve Arga, 2020), ormansızlaşma (Curdt-Christiansen, 2020), biyolojik çeşitlilikte azalma (Aurelio vd., 2021; Muthukrishnan, 2019) ve salgın (Amardini vd., 2021) gibi sorunlardan muzdarip bir ortamda dünyaya gelmektedir. Dünya Yaban Hayatı Fonu'nun Yaşayan Gezegen Raporu'na göre, 1970'den itibaren memeliler, kuşlar ve balıklar dahil olmak üzere canlı türlerinin popülasyonları yüzde 68 azalmış, temiz suyun yüzde 85'inden fazlası yok olmuş ve buzsuz araziler şimdiden yoğun bir şekilde kirlenmiştir (Almond vd., 2020). Sürdürülebilir olmayan insan yapımı sistemler nedeniyle (Lopez-Alcarria vd., 2021) tüm canlılar için hayati önem taşıyan ekosistemler zarara uğramıştır (BM Çevre, 2019). İnsan eylemleri ve doğal çevre arasındaki bu güçlü bağlantı çevreyi korumak için sürdürülebilir eylemlere olan ihtiyacı göstermektedir.

İnsan eylemleri ve yaşam tarzları çevre sorunlarının altında yatan nedenlerin kaynağı olarak görülmektedir (Connell vd., 1999; Rogers vd., 2008; Sage, 1996; Tung vd., 2002). Endüstride çevre dostu olmayan teknolojinin hızla kullanılması ve insanlığın sürdürülebilir olmayan çözümleri dünya üzerindeki yaşamı olumsuz etkilemiş ve yeniden şekillendirmiştir (Davis, 2010). Çevresel zararlardan sonra insanlar, çevreyi korumak ve kaynakları dünyanın sınırlı kapasitesi dahilinde sürdürmek için önleyici çözümler aramaya başlamışlardır (Davis, 2010; McBride vd., 2013). Medyanın çevreye duyarlı davranışlara ve çevre okuryazarlığının gerekliliğine odaklanmasıyla beraber, çeşitli ulusal/uluslararası konferans ve organizasyonlarda çevre sorunları

daha derinden tartışılmış ve 70'lerin ortalarından itibaren sürdürülebilir kalkınma önem kazanmaya başlamıştır (Marcinkowski, 2006). Bu görüşmelerde, insanları çevre ve çevre problemlerinden haberdar etmek için eğitim önemli bir araç olarak savunulmuştur (McBride vd., 2013). İnsanların sürdürülebilir bir geleceğe olan ihtiyacı doğrultusunda, daha sonra Sürdürülebilir Kalkınma için Eğitim'in yerine geçen Çevre Eğitimi ortaya çıkmıştır (Filho, 2009). Bu doğrultuda, Çevre Eğitimi gezegenin ve doğal kaynakların sürdürülebilir bir şekilde devam ettirilmesi ile yakından bağlantılıdır (Schleicher, 2012).

Çevre Eğitimi, 1900'lerin başında, sınıf ortamındaki kavramsal eğitimi genişletmek yerine çocukları doğayı aktif bir şekilde deneyimlemeleri için sınıftan dışarı çıkarmayı savunan bir hareketten ortaya çıkmıştır (Disinger, 1983). Daha sonra evrensel konferanslarda Çevre Eğitimi'nin amaçları ve pedagojik ilkeleri belirlenmiştir. Başlıca, Çevre Eğitimi Tiflis Deklarasyonu'nda (UNESCO, 1978) üç hedef üzerine kurulmuştur. Bu hedefler çevre sorunları hakkında farkındalık uyandırmak, ekolojik bilginin öğrenme fırsatlarını teşvik etmek ve çevreye karşı sorumlu davranışları arttırmakla ilgilidir.

İlgili literatür Çevre Eğitimi'nin çevre okuryazarı insanlar yetiştirmede güçlü bir araç olduğunun altını çizmektedir (Hollweg vd., 2011; Hungerford ve Volk, 1990; McBride vd., 2013; Palmer, 1998; Roth, 1992; Simmons, 1998; Stapp, 1978; UNESCO, 1978; Venkataraman, 2008; Yang, 1993). Sonuç olarak, Çevre Okuryazarlığı küresel olarak önem kazanmış ve Çevre Eğitimi'nin birincil amacı olarak yer almıştır (Culen, 2001). Harvey (1977) çevre okuryazarı bireyi “insan-çevre ilişkisi için gerekli temel becerilere, anlayışlara ve duygulara sahip olan kişi” olarak tanımlamıştır” (s.67). Çevre Okuryazarlığı, çevre sorunlarıyla başa çıkmak ve sürdürülebilir kalkınmaya katkıda bulunmak için canlı ve cansız varlıklar, yaşam alanı, güneş sistemi ve doğal sistem bilgisinin yanı sıra çevre bilinci, olumlu duygular, merak, endişe, öz-yeterlik, çevreye duyarlı davranışlar ve çevresel becerileri kapsar (UNESCO, 1989). Çevre Okuryazarlığı'nın bileşenleri olan çevresel farkındalık, çevre bilgisi, duyuşsal eğilimler, çevreye duyarlı davranışları ve çevresel becerileri geliştirmek için erken çocukluk dönemi çok önemlidir (Davis ve Gibson, 2006). UNESCO/UNEP'te (1990) erken çocukluk döneminin, çevreyi korumaya yönelik ve çevre problemlerinin

çözülmesi için etkin adımlar atacak bireylerin yetiştirilmesi için kritik olduğu belirtilmiştir.

Çevre Okuryazarlığı üzerine yapılan araştırmalar, çevre bilgisi ve olumlu duygular gibi duyuşsal eğilimlerin çevreye duyarlı davranış gösterme niyetini etkilediğini göstermektedir (Dresner ve Gill, 1994; Hungerford ve Volk, 1990; Ramsey ve Rickson, 1977; Makki, 2003; Meinhold & Malkus, 2005). Bu nedenle, sürdürülebilir kalkınmanın mihenk taşı olarak çevreye duyarlı davranışların kalıcı olarak oluşturulması için erken yaşlarda Çevre Okuryazarlığı'na ait tüm bileşenlerin kazanılmasının gerekli olduğu savunulabilir.

Kuzey Amerika Çevre Eğitimi Derneği (NAAEE), kişisel, sosyal ve fiziksel bağlamda çevre bilgisi, çevreye yönelik duyuşsal eğilimler, çevreye duyarlı davranışlar ve çevresel becerilerin dahil edildiği Çevre Okuryazarlığı çerçevesini geliştirmiştir (Hollweg vd., 2011). Aynı şekilde Planlanmış Davranış Teorisi, insanın her davranışını niyet, tutumlar, öznel normlar ve algılanan davranışsal kontrol ile açıklar (Bailey, 2006). Planlanmış Davranış Teori'sine (Ajzen, 1985) göre, çevreye duyarlı davranışlar tutum ve niyet dahil olmak üzere bir takım yordayıcılardan kaynaklanır. Planlanmış Davranış Teorisi, yetişkinlerin ve çocukların davranış kalıplarını tahmin etmek ve açıklamak için çok çeşitli ampirik alanlarda doğrulanmış en yaygın kullanılan sosyal psikolojik teoridir (Bamberg ve diğerleri, 2003; Elliott & Ainsworth, 2012). Önceden yapılmış bazı çalışmalarda, bireylerin doğal kaynakları (su, ağaç gibi) koruma, çöp toplama davranışları ve çevresel konularda harekete geçme niyetleri bu teori kullanılarak incelenmiştir (Abrahamse ve Steg; 2011; Chen ve Tung, 2010; Richetin vd., 2012; Wan vd., 2014)

Çevre Okuryazarlığı, erken çocukluk döneminde başlaması gereken temel uygulamalı bir eğitim sağlar. 48 aydan itibaren çocukların yakın çevrelerinden başlayarak, çevre ile ilgili farkındalıkları sağlanabilir (Sobel, 1996). Çocuk edebiyatı, çocuklara yeni fikirleri veya idealleri tanıtmak için yararlı bir araç olarak hizmet eder (Chapman ve O'Gorman, 2022). Resimli öykü kitapları, genellikle küçük çocuklar için yazılan çocuk edebiyatının yazılı eserlerinden biridir (Lynch-Brown ve Tomlinson, 1999). Resimli öykü kitaplarının, çevresel unsurları ve sorunları görünür kılmak ve çocukları çevre

sorunları hakkında düşünmeye ve öğrenmeye teşvik etmek için küçük çocuklar için geniş bir eğitim potansiyeli vardır (Wason-Ellam, 2010). Tipik olarak, bu kitapların hem metinlerin hem de resimlemelerin katkısıyla sunulan bir olay örgüsü vardır (Russel, 2001). Olay örgüsü çocukları sorgulamaya ve ekolojik olaylar arasında neden-sonuç ilişkisi kurmaya teşvik ederken, resimlemeler çocukların dinlediklerini zihninde canlandırmasını destekler (Shine, 1995; Ural, 2013). Resimli öykü kitapları evde ve sınıf ortamlarında kolayca ulaşılabilen materyallerdir (Hart, 1981). Türkiye Cumhuriyeti Milli Eğitim Bakanlığı'na (2013) göre, her okul öncesi sınıfında resimli öykü kitaplarının bulunduğu bir kütüphane merkezi olmalıdır. Bu nedenle, Çevre Okuryazarlığı'na ait bileşenlerin çocuklara tanıtılması için iyi tasarlanmış resimli öykü kitapları erken çocukluk eğitim ortamının günlük rutininin bir parçası olarak kullanılabilir.

Çalışmanın Amacı

Bu çalışma, daha önce sistematik olarak araştırılmamış çocuk edebiyatında sunulan Çevre Okuryazarlığı'nın dört bileşeninin kapsamlı bir şekilde incelenmesini amaçlamaktadır. Belirtilen amaçla ilgili olarak, 48-72 aylık çocuklara yönelik resimli öykü kitapları incelenerek, kitaplardaki Çevre Okuryazarlığı bileşenlerini betimsel bir şekilde sunmak, çocuk edebiyatının mevcut durumunu açıklamak ve eğitim paydaşları, yazarlar ve yayıncılar için iyileştirme alanlarını belirlemek faydalı olabilir. Araştırmacı, kitapların başlığı, konusu, kapak resmi ve resimlemeleri ile ilgili Çevre Okuryazarlığı bileşenlerinin temsillerini betimlemeyi amaçlamaktadır. Yukarıda sunulan bilgiler ışığında, bu çalışma aşağıdaki araştırma sorularına cevap vermeyi amaçlamıştır:

- 1- 48-72 aylık çocuklara yönelik resimli öykü kitaplarının betimleyici özellikleri (yayın yılı, yayınevi, çeviri durumu, ödüllü olma durumu) nelerdir?
- 2- 48-72 aylık çocuklara yönelik resimli öykü kitaplarında Çevre Okuryazarlığı bileşenleri ne ölçüde sunulmaktadır?
 - a) 48-72 aylık çocuklar için resimli öykü kitaplarının başlık, olay örgüsü, kapak resmi ve resimlemelerinde sunulan çevre bilgisinin çeşitliliği nedir?

b) 48-72 aylık çocuklara yönelik resimli öykü kitaplarının başlık, olay örgüsü, kapak resmi ve resimlemelerinde sunulan çevreye yönelik duyuşsal eğilimlerin çeşitliliği nedir?

c) 48-72 aylık çocuklar için resimli öykü kitaplarının başlık, olay örgüsü, kapak resmi ve resimlemelerinde sunulan çevreye duyarlı davranışların çeşitliliği nedir?

d) 48-72 aylık çocuklar için resimli öykü kitaplarının başlık, olay örgüsü, kapak resmi ve resimlemelerinde sunulan çevresel becerilerin çeşitliliği nedir?

3- 48-72 aylık çocuklara yönelik resimli öykü kitaplarında yer alan Çevre Okuryazarlığı temsillerinin yayın yılına ve çeviri durumuna göre dağılımı nedir?

İlgili Terimlerin Tanımı

Çevre Bilgisi: Çevre bilgisi, ekolojik sistemler, doğa tarihi, çevre sorunları ve kültürel, sosyo-politik-ekonomik eylemler hakkında bilgi sahibi olmayı ifade eder (Hollweg vd., 2011).

Çevreye Yönelik Duyuşsal Eğilimler: Çevre Eğitimi bilmenin ve tanımının ötesindedir; duyarlılık, duygudaşlık, saygı, merak, olumlu duygu ve kaygı ile doğaya ve doğadaki canlı/cansız unsurlara karşı duygusal bağlar kurmayı ve koruyucu tutumlar göstermeyi amaçlar (McBride vd., 2013). Bu bağlamda duyuşsal eğilimler, bireylerin çevresel konulara karşı içsel tepkileri olarak tanımlanabilir (Hines, Hungerford ve Tomera, 1987; Kals ve Maes, 2002; Kollmuss ve Agyeman, 2002).

Ekolojik Bilgi: Ekolojik bilgi, doğada bulunan canlı/cansız unsurlar ve özellikleri, yaşam alanları, madde döngüsü, güneş sistemi, besin zinciri, coğrafi yer şekilleri, doğa olayları ve doğa tarihi hakkındaki bilgileri ifade eder (McBride vd., 2013).

Çevre Eğitimi: Çevre Eğitimi, insanlar ve doğa arasında daha fazla kendi kendine güdümlü bağları güçlendirmeyi destekleyen tüm konularla ilgili projeler içeren aktif bir süreçtir. Çevre Eğitimi'nin genel hedefi sürdürülebilir kalkınma ve çevresel kalitedir (UNESCO, 1977).

Çevre Okuryazarlığı: UNESCO, Çevre Okuryazarlığı'nı "tüm insanlar için çevresel ihtiyaçlarla başa çıkmak ve sürdürülebilir kalkınmaya katkıda bulunmak için onlara temel bilgi, beceri ve güduları sağlayan temel işlevsel eğitim" olarak tanımlamıştır (UNESCO, 1997). Bu çalışmada, Çevre Okuryazarlığı'nın dört ana bileşeninden oluşan bir çerçeve oluşturularak 48-72 aylık çocuklara yönelik resimli öykü kitapları betimlenmiştir. Dört ana bileşeni çevre bilgisi, çevreye yönelik duygusal eğilimler, çevreye karşı sorumlu davranışlar ve çevresel beceriler oluşturmaktadır.

Çevreye Duyarlı Davranışlar: "Çevre sorunlarının/sorunlarının düzeltilmesine yönelik herhangi bir birey veya grup eylemi" tanımlanmaktadır (Sivek & Hungerford, 1990).

Çevresel Beceriler: Çevresel beceriler, çevresel bir sorunla başa çıkma becerilerini ve sorunu çözme adımlarını ifade eder. Bu adımlar, bir çevre sorununun belirlenmesini, tanımlanmasını, çevresel çözüm önermeyi, çevresel çözümün uygulanmasını ve çevresel çözümün değerlendirilmesini içerir.

Harekete Geçme Niyeti: Harekete geçme niyeti, sözlü taahhüt ile birbirinin yerine kullanılmıştır. Niyet, tutumun yapıcı bileşeni olarak görülmüş ve genellikle bu yapıcı bileşenin, tutumun duygusal bileşeni ile ilgili olduğu varsayılmıştır. Bu kavramsallaştırma, tutumlar ve niyetler arasında güçlü bir ilişki olduğu varsayımına yol açmıştır (Fishbein ve Ajzen, 1975, s.289).

Öz-yeterlik: Öz-yeterlik, bireyin performans kazanımları üretmek için gerekli davranışları gerçekleştirme kapasitesine olan inancını ifade eder (Bandura, 1999).

Kontrol Odağı: Kontrol odağı, "bireyin belirli bir eylemin, eylemde bulunması beklenen bir pekiştirmeyle sonuçlanıp sonuçlanmayacağına ilişkin algısı" olarak tanımlanabilir (Ramsey, 1993).

Resimli Öykü Kitabı: Resimli öykü kitabı, çocuk edebiyatının bir olay örgüsüne sahip özel bir biçimidir. Olay örgüsü metin ve resimlemeler birlikte kullanılarak okuyucuya aktarılır (Lynch-Brown ve Tomlinson, 1999).

YÖNTEM

Araştırma Deseni

Bu çalışma 48-72 aylık çocuklara yönelik yazılmış, 2010-2021 yıllarında basılan, Türkçe ve çeviri resimli öykü kitaplarını içerik analizi yöntemiyle incelemeyi amaçlamaktadır. İçerik analizi yöntemi “metinlerden yinelenebilir ve geçerli çıkarımlar yapan bir araştırma yöntemi” (Krippendorff, 2004, s.18) ve “iletilerin niteliklerinin sistematik, nesnel nicel analizi” (Neuendorf, 2002, s.1) olarak tanımlanmıştır. Bu çalışmada resimli öykü kitaplarının metin ve resimlemeleri Çevre Okuryazarlığı'nın dört bileşenini temsil etme potansiyelleri açısından incelenmektedir.

Örneklem

Araştırmanın amacı doğrultusunda araştırmanın evrenini 48-72 aylık çocuklar için yazılmış, 2010 ve 2021 yılları arasında basılmış resimli öykü kitapları oluşturmaktadır. Örneklem seçilirken amaçlı örneklem yöntemine başvurulmuştur. Bu örneklem çeşidi araştırmacının örnekleme ilgili literatüre ve araştırma sorusuna dayanarak belirlemesiyle oluşmaktadır (Fraenkel vd., 2012). Özel olarak içerik analizi yönteminde araştırmacı amaçlı örneklem kullanarak araştırma sorusuna hitap eden bağıntılı metin evrenine ulaşmayı hedeflemektedir (Krippendorff, 2004). Bu çalışmada amaçlı örneklem üç kriter doğrultusunda belirlenmiştir. 2010-2021 yılları arasında 48-72 aylık çocuklara yönelik Türkçe dilinde yayınlanmış resimli öykü kitaplarıyla evren sınırlandırılmıştır. Çalışma evreninin kaynağını kitapların herkes tarafından erişilebilirliği ve yaygın kütüphane kullanımı gözetilerek Ankara'da Türkiye Cumhuriyeti Cumhurbaşkanlığı Millet Kütüphanesi bünyesinde bulunan Nasreddin Hoca Çocuk Kütüphanesi oluşturmuştur. Önceki çalışmalar (Alan, 2015; Bradbery, 2013; Cengizoğlu, 2013; Davis, 2009; Hsiao & Shih, 2015; Spearman & Eckhoff, 2012) çevre ile ilgili kavramların öğrenilmesi, çevreye yönelik olumlu duyguların geliştirilmesi, çevreye duyarlı davranışların hayat boyunca sürdürülmesi ve çevresel becerilerin edinmesi için 48-72 aylık çocukların yetkin olduklarını ortaya koymuştur.

Veri Toplama Aracının Geliştirilmesi

Çalışmanın yapıldığı tarihte, mevcut benzer bir çalışmaya rastlanılmadığı için veri toplama aracını araştırmacı ilgili literatür rehberliğinde geliştirmiştir. Geliştirilen kod kitabının dil açısından uygunluğu ve çalışmanın amacına uygunluğu okul öncesi eğitimi alanında uzman 4 akademisyen tarafından incelenmiştir.

Kodlama ve Kategori Oluşturma

Araştırmacı, araştırma sorularını belirledikten sonra ilgili literatürü inceleyerek kod ve kategorileri tümdengelsel bir şekilde oluşturmuştur (Saldana, 2021). Kod kitabının nihai hali 4 ana kategori, 5 alt kategori, 52 madde ve 52 madde açıklaması/örneklerini içermektedir. Resimli öykü kitaplarının başlık, kapak resmi ve resimlemeleri iki kategori (ilgili madde açık bir şekilde temsil edilmiştir/ilgili madde temsil edilmemiştir) altında incelenmiştir. Resimli öykü kitaplarının olay örgüsü ise üç kategori altında incelenmiştir. Bu kategoriler şunlardır; ilgili madde açık bir şekilde temsil edilmiştir/ilgili madde olay örgüsünde örtük bir şekilde temsil edilmiştir fakat vurgulanmamıştır/ ilgili madde temsil edilmemiştir.

Pilot Çalışma

Nasreddin Hoca Çocuk Kütüphanesi'nde bulunan 48-72 aylık çocuklara yönelik resimli öykü kitapları arasından rastgele seçilen 10 resimli öykü kitabı ile bir pilot çalışma yapılmıştır. Araştırmanın güvenilirliğini değerlendirmek amacıyla pilot çalışma, ikinci bir kodlayıcı dahil edilerek yürütülmüştür (Fraenkel vd., 2019). Bu çalışmada kodlayıcılar arası kodlayıcı güvenilirliği %95,96 olarak bulunmuştur. Daha sonra iki kodlayıcının kodlamaları karşılaştırılmıştır. Farklı kodlanan maddeler kodlayıcılar arasında tartışılmış ve kodlama kriterleri üzerinde anlaşmaya varılmıştır.

Ana Çalışma

Kod kitabına nihai halinin verilmesinin ardından Mayıs 2022'de veri toplama süreci başlamıştır. Ana çalışma için verilerin toplanması üç hafta sürmüştür. Araştırmanın ölçütlerine uygun resimli öykü kitapları Çevre Okuryazarlığı kod kitabı kullanılarak

incelenmiştir. 755 resimli öykü kitabı bu çalışmaya örneklem olarak dahil edilmiştir. Birden fazla olay örgüsü içeren ve eksik sayfası bulunan kitaplar çalışmanın dışında bırakılmıştır.

Veri Analizi

Verilerin analizinde betimsel istatistiksel yöntem kullanılmıştır. İçerik analizi çalışmalarında, ilgili verilerin durumu, tipik olarak, çalışmanın genel verilerinin sıklığı veya oranı ile birlikte sunulmaktadır (Fraenkel vd., 2019). Veriler IBM SPSS İstatistik Programı versiyon 28 ile analiz edilmiştir. Çalışmadan elde edilen sonuçlar sıklık ve oran verilerek raporlanmıştır.

Geçerlilik ve Güvenirlik

Neuendorf (2002) geçerliliği “bir ölçme prosedürünün yalnızca amaçlanan kavramı temsil etme kapsamı” şeklinde belirtmektedir. Çalışmanın iç geçerliliğini sağlamak amacıyla kod kitabı alanda uzman 4 akademisyen tarafından incelenmiş ve çalışmanın amacına uygun olarak değerlendirilmiştir.

İçerik analizi yönteminde çalışmanın güvenilirliğini ölçmek için farklı kodlayıcılar arasındaki kodlama uyuma oranı kullanılmaktadır (Creswell, 2007). Güvenirliği test etmek amacıyla ana örneklemin %8’inden seçkisiz yöntemle oluşturulan alt örneklem okul öncesi eğitimi alanında yüksek lisans programında öğrenim gören ikinci bir araştırmacı ile incelenmiş ve değerlendirilmiştir. Kodlayıcılar arasındaki uyuma Miles ve Huberman’ın formülü (1994) kullanılarak hesaplanmış ve %95,96 uyuma bulunmuştur.

Çalışmanın Sınırlılıkları

Bu çalışmada Çevre Okuryazarlığı’nın temsilleri başlık, olay örgüsü, kapak resmi ve resimleme açısından incelenmiştir. Çalışma kapsamında 48-72 aylık çocuklara yönelik toplam 755 resimli öykü kitabı analiz edilmiştir. Örneklem amaçlı örnekleme yöntemi kullanılarak seçilmiştir. İlk sınırlılık, Ankara Çankaya’da bulunan Nasreddin Hoca

Çocuk Kütüphanesi'ndeki resimli öykü kitaplarına ulaşıp incelenmiş olmasıdır. Bu nedenle bir genelleme yapmak için kütüphanede ulaşılan resimli öykü kitaplarıyla sınırlı kalınmıştır. İkinci sınırlılık, mevcut çalışmanın nesnelliği ile ilgili olabilir. Pilot çalışmada ikinci bir kodlayıcı dahil edilmiş olmasına rağmen ana çalışmadan elde edilen veriler araştırmacı tarafından kodlanmış ve analiz edilmiştir.

BULGULAR VE TARTIŞMA

Resimli Öykü Kitaplarının Betimsel Özellikleri

Çalışma kapsamında 2010-2021 yılları arasında yayınlanan resimli öykü kitapları incelenmiştir. Sonuçlar, kitapların çoğunun 2016, 2017 ve 2018 yıllarında yayınlandığını göstermiştir. Bu bulguya benzer şekilde, çocuk kütüphanelerinde yapılan bazı araştırmalarda resimli öykü kitaplarının çoğunun son zamanlarda yayınlandığı ortaya konulmuştur (Alan, 2015; Goins, 2004; Sarı, 2019; Veziroğlu ve Gönen, 2012). Bu yaygın bulgu, çocuk kütüphanelerindeki kitap koleksiyonunun yıllık olarak yenilenmesi ile açıklanabilir.

İncelenen resimli öykü kitapları 134 farklı yayınevi tarafından yayınlanmıştır. En çok kitap İş Bankası Kültür Yayınları, 1001 Çiçek Kitaplar Yayıncılık ve Yapı Kredi Yayınları tarafından yayınlanmıştır. Araştırmaya dahil edilen yalnızca bir veya iki resimli öykü kitabının yayınlandığı yayınevleri mevcuttur. Bu çalışmada, yayınevi yelpazesi kısıtlanmadığından çok fazla sayıda yayınevine erişilmiştir.

Resimli öykü kitaplarının çeviri durumuna ilişkin bulgulara göre yarısından fazlası (%55,5) İngilizce, Rusça, Çince gibi diğer dillerden çevrilmiştir. Kitapların geri kalanı orijinal olarak Türkçe yazılmıştır. Bu bulguya paralel olarak, Türkiye'de yayınlanan resimli öykü kitaplarının yarısının çeviri yarısının Türkçe olduğu bir başka çalışmada da bulunmuştur (Işıtan, 2016). Mevcut bulguların, Türkiye'de 0-6 yaş arası çocuklar için yayınlanan resimli öykü kitaplarının sayısının Batı ülkelerine göre çok daha az olmasından kaynaklandığı söylenebilir (Kozikoğlu, 2013).

Ayrıca, mevcut örneklemdaki resimli öykü kitaplarından yalnızca 29 tanesi ulusal veya uluslararası edebiyat ödülü almıştır. Bu ödüllerden bazıları Caldecott Ödülü,

New York Times En İyi Resimli Çocuk Kitapları ve Bologna Çocuk Kitapları Fuarı-Yeni Ufuklar Ödülü olmuştur. Ödül alan resimli öykü kitaplarının çoğunun çeviri olduğu bulunmuştur. Benzer şekilde, Büyükelan-Filiz ve Harmankaya (2019), Türkiye'de bulunan ödüllü resimli öykü kitaplarının çoğunlukla tercüme kitaplar olduğu tespit etmiştir. Örneklemin yalnızca küçük bir bölümünün edebiyat kurulları tarafından dikkate değer olarak seçildiği açıktır. Bu sonuç, diğer ülkelere kıyasla Türkiye'de yayınlanan ödüllü resimli öykü kitaplarının sayısının daha az olması nedeniyle beklenen bir durumdur. Fakat bu çalışmada örneklem edebi niteliklere göre sınırlandırılmamıştır.

Çevre Okuryazarlığı Temsillerinin Resimli Öykü Kitaplarında Dağılımı

Araştırma kapsamında 48-72 aylık çocuklara yönelik resimli öykü kitaplarında Çevre Okuryazarlığının ana kategorileri olan çevre bilgisi, çevreye yönelik duyuşsal eğilimler, çevreye duyarlı davranışlar ve çevresel beceriler incelenmiştir. Temel bulgulara göre, Çevre Okuryazarlığı bileşenleri başlıkların %66,7'sinde, kapak resimlerinin %98,9'unda ve resimlemelerin %99,6'sında gözlemlenmiştir. Olay örgülerinin %99,6'sı tamamen vurgulanmış ve açık bir şekilde sunarken, %7,4'ü örtük bir şekilde Çevre Okuryazarlığı bileşenlerini sunmaktadır.

Bu çalışmanın bulguları, çevre bilgisinin resimli öykü kitaplarında en çok temsil edilen kategori olduğunu göstermiştir. Özellikle ekolojik bilgi neredeyse tüm kitaplarda sunulmuştur. Kitaplarda en çok kültürel, sosyal ve politik bilgi alt kategorisinin bir maddesi olan çevre hakları bilgisi örtük şekilde temsil edilmiştir. Çevre sorunları bilgisi alt kategorisine ise en az yer verildiği görülmüştür. Çevreye yönelik duyuşsal eğilimler bakımından, kitaplarda en çok olumlu duygulara yer verildiği görülmüştür. Kontrol odağı ve öz-yeterliğin yeteri kadar temsil edilmediği söylenebilir. Ajzen ve Fishbein (1980) ve Bandura'ya (1999) göre, kontrol odağı ve öz-yeterlik çevreye duyarlı davranış sergilemenin kritik öğeleridir. Çevreye duyarlı davranışlardan en çok doğal kaynak kullanımını azaltma, tarım faaliyeti yapma, atık malzemeleri yaratıcı yollarla yeniden kullanma ve çevre dostu araç-gereçler kullanma maddelerine yer verilmiştir. Son olarak, resimli öykü kitaplarında en az çevresel becerilerin temsil edildiği söylenebilir. Başka çalışmalarda da benzer sonuçlar bulunmuştur. Bunun

sebebi, çevresel becerilerin yüksek düşünme becerilerini gerektiriyor olması ile açıklanabilir (Forehand, 2005; Hollweg vd., 2011).

Çevre Okuryazarlığının temsilleri, resimli öykü kitaplarının yayın yıllarına ve çeviri olma durumuna göre değişiklik göstermiştir. Çevre Okuryazarlığı en çok 2016, 2017 ve 2018 yıllarında yayınlanan resimli öykü kitaplarında yer alırken, en az 2010, 2011, 2020 ve 2021 yıllarında sunulmuştur. Ayrıca bu kitapların yarısından fazlası çeviri kitaplardır. 2016 yılından itibaren yayınlanan çeviri resimli öykü kitaplarında Çevre Okuryazarlığı'nın temsillerinin arttığı gözlemlenmiştir. Bu artış, Çevre Eğitimi'nin son on yılda çeşitli erken çocukluk eğitimi çalışmalarında artan ilgi görmesiyle ve UNESCO'nun 2015 yılında yayınladığı Sürdürülebilir Kalkınma Hedefleri ile açıklanabilir (Ardoin ve Bowers, 2020; Aurelio vd., 2021; Häggström ve Schmidt, 2020; Fang, 2018; Green ve Dymont, 2018). Öğretmenler, Sürdürülebilir Kalkınma Hedeflerini kitaplar aracılığıyla tanıtarak müfredatlarını geliştirebilir ve çocuklara dünyayı daha iyi hale getirmek için çevresel bağlantılar bulma konusunda ilham verebilir (Holshouser ve Medina, 2021). Ayrıca Türkiye'de Çevre Eğitimi, 2014 yılından itibaren Çevre, Şehircilik ve İklim Değişikliği Bakanlığı ve Milli Eğitim Bakanlığı çalışmaları ile okullarda yaygınlaşmaya başlamıştır (Önal vd., 2019). Ayrıca ilkökul müfredatı çevre kavramlarına yönelik daha fazla ders planı içerecek şekilde revize edilmiştir (Ürey ve Aydın, 2014). Okul müfredatlarında yapılan revizyonlarla ilkökul ve ortaokul ders kitaplarında açık ve örtük mesajlar verilmeye başlanmıştır (Önal vd., 2019). Araştırma kapsamında, resimli öykü kitaplarında çocuklara yönelik Çevre Okuryazarlığı temsillerinin son yıllarda açık ve örtük yollarla sunulduğu tespit edilmiştir.

ÖNERİLER

Araştırma kapsamında incelenen 48-72 aylık çocuklara yönelik resimli öykü kitaplarının çevre bilgisini temsil etme açısından zengin olduğu tespit edilmiştir. Özellikle ekolojik bilgiler ile sosyo-kültürel ve politik bilgiler yeterince sunulmuştur. Ancak çevre konuları ve sorunlarına ilişkin bilgilerden nadiren bahsedildiği görülmüştür. Resimli öykü kitaplarında, çevre sorunlarına ve bu sorunların çözümleri hakkında daha fazla örneğe yer verilebilir. Çocuklara yönelik resimli öykü kitaplarının

yazarları ve yayıncılarına, küresel ısınma, kirlilik, yoksulluk, biyolojik çeşitlilik kaybı ve ormansızlaşma gibi çevresel sorunları ve sorunları ele almaları önerilmektedir. Böylelikle, çocukların çevre sorunları hakkında farkındalıkları ve gelecekte çevreye daha duyarlı davranışlar sergilemeleri artırılabilir (Aurelio vd., 2021; Kelly vd., 2021).

Çevreye yönelik duyuşsal eğilimlerle ilgili olarak, sevgi, duyarlılık, çevreye yönelik umut, doğadaki canlılara karşı empati gibi çevreyle ilgili takdir ve olumlu duygular resimli öykü kitaplarına en çok yansımıştır. Ancak çevreyle ilgili üzüntü, korku ve karamsarlık gibi olumsuz duygular olay örgülerinde çokça dile getirilmiş ve resimli öykü kitaplarında çocuk karakterlerin bakış açısından resimlerle gösterilmiştir. Olumsuzluk sergilemek, çocuklarda doğa ile ilgili ön yargıların ve korkuların oluşmasına neden olabilir (Sobel, 1996). Bu nedenle yazarlar ve yayıncılar resimli öykü kitaplarında çevreye yönelik takdir, sevgi, umut, saygı ve merakı vurgulayabilirler. Resimli öykü kitapları ise çevreye karşı tutum ve ilgi oluşturmak için faydalı eğitsel materyallerdir ve erken çocukluk döneminde oldukça önemlidir (Aurelio vd., 2021). Ek olarak, öz yeterlilik ve kontrol odağı, çevreye karşı sorumlu davranışların belirleyicileridir (Ajzen ve Fishbein, 1980; Bandura, 1999). Bu nedenle, çocukların yeteneklerine ilişkin inançları metinler ve resimlemeler içeren öykü kitapları aracılığıyla desteklenebilir. Çocukların kendilerine olan güvenleri desteklenirse, çevresel zorluklarda harekete geçmeye ve bunları çözmek için sorumluluk almaya istekleri artabilir.

Çalışmadan elde edilen bulgular ışığında, resimli öykü kitaplarında çevreye duyarlı davranışlara daha fazla önem verilmesi tavsiye edilebilir. Hollweg ve diğerlerine göre (2011), çevreye duyarlı davranışlar Çevre Okuryazarlığı'nın en büyük dışa vurum ifadesidir. Hsiao ve Shih (2015), resimli öykü kitaplarının çocuklarda çevreye karşı sorumlu davranışları geliştirmede oldukça etkili araçlar olduğunu ortaya koymuştur. Bu nedenle öykü kitapları, çevre dostu malzemeler kullanmak, kompost yapmak, gönüllü faaliyetlere katılmak, çevre politikalarına uymak gibi konulara yer verilerek zenginleştirilebilir. Böylece, çocukları ev ve sınıf ortamlarında bu davranışları sergilemeye ve çevreyi korumak için akranları, ebeveynleri ve toplumun diğer üyeleriyle birlikte çalışmaya teşvik etmeye yardımcı olacaktır.

Resimli öykü kitaplarında çevresel becerilere çok az yer verildiği söylenebilir. Çocukların Çevre Okuryazarlığı'nı tüm bileşenler yönünden geliştirmek için, çevre becerileri resimli öykü kitaplarında daha fazla sunulabilir. Yazarlar, yayıncılar ve öğretmenler, çevresel çözümleri çocuklarla birlikte değerlendirmek için bir çevre sorununu tanımlayarak başlayabilirler. Özellikle bu tür resimli öykü kitaplarında çevre sorunlarının düşünülmesi ve uygulanmasına daha fazla yer verilmelidir. Bu sayede çocukların üst düzey düşünme becerileri ve çevresel zorluklarla başa çıkmada çevresel yeterlikleri resimli öykü kitaplarının metinleri ve resimlemeler ile aktarılan mesajlarla desteklenebilir.

Resim ve metin dengesi göz önünde bulundurulduğunda, araştırmadan elde edilen bulgular başlık, olay örgüsü ve resimlemelerde temsil edilen Çevre Okuryazarlığı bileşenlerinin kapak resimlerine yeteri kadar yansıtılmadığını göstermiştir. Kapak resimleri öykü kitaplarının tanıtımı niteliğindedir (Asan, 2021). Genel olarak çoğu okuyucu kitap hakkında ilk izlenimlerini kapak resimlerine bakarak edinirler (Strnad ve Magnusson-Hewitt, 2021). Çocukların da kapak resimlerine bakarak kitabın içeriği hakkında bilgi ve tutum geliştirdikleri ortaya konulmuştur (Ratminingsih vd., 2020). Bu nedenle, yazar ve yayın evlerine Çevre Okuryazarlığı bileşenlerine kitabın içeriğini yansıtacak şekilde kapak resimlerinde daha çok yer verilmesi önerilmektedir.

4-6 yaş arası okul öncesi çocuklarla yapılan bir araştırmaya göre çocuklara soyut kavramlar sözlü olarak verildiğinde bu kavramları çevre ile ilişkilendirememişlerdir (Honig ve Mennerich, 2013). Nitekim Piaget'e (1977) göre erken çocukluk dönemi çocukları soyut kavramları anlamakta zorlanmakta ve kavram yanılgılarına düşmektedir. Bu nedenle çevre ile ilgili kavramların çocuklara yönelik gelişimsel olarak uygun uygulamalarla somutlaştırılması gerekmektedir (Coppie ve Bredekamp, 2009). Bu noktada öğretmenler ve ebeveynler, geleceğin çevre okuryazarı ve yeterli çevre bilgisine sahip vatandaşlarının şekillenmesinde kritik bir rol oynamaktadır. Öğretmen-çocuk ve ebeveyn-çocuk etkileşimli kitap okuma etkinlikleri çocukların çevresel bilgi ve düşünme becerilerini geliştirir (Fang, 2018). Ayrıca resimli öykü kitaplarındaki resimlemelerin tartışılması, çocukların çevrelerindeki günlük yaşam deneyimlerini hayal etmelerine yardımcı olur (Yu, 2012). Bu nedenle öğretmenler ve ebeveynler, çocukların çevre kavramlarını metin ve resimli mesajlar yoluyla

anlamalarını sağlamak için somut eğitim materyalleri olan resimli öykü kitaplarını kullanabilirler (Hsiao ve Shih, 2016). Öykü anlatırken, ebeveynler ve öğretmenler, sadece olay örgüsünün sözlü anlatımından ziyade, çocuklarla günlük yaşam deneyimlerini sorgulayarak, tartışarak ve karşılaştırarak etkileşimli okumayı tercih edebilirler.

Literatür, resimli öykü kitaplarının çocuklara çevresel kavramları tanıtmak için çok etkili araçlar olduğunu ortaya koymaktadır (Pe'er vd., 2007). Sonuç olarak, literatüre katkı sağlayacak daha fazla içerik analizi çalışması yapılabilir. Mevcut içerik analizi çalışması, araştırmacı tarafından oluşturulan bir Çevre Okuryazarlığı kod kitabı ile gerçekleştirilmiştir. Araştırmanın örneklemi olarak Ankara'daki bir çocuk kütüphanesinde bulunan toplam 755 resimli öykü kitabı amaçlı örnekleme yöntemiyle araştırmaya dahil edilmiştir. Aynı kod kitabı kullanılarak çeşitli ulusal veya okul kütüphanelerinde daha geniş örneklemler dahil ederek ileri çalışmalar yapılabilir. Bu sayede araştırmacılar farklı örneklemlerden veri sağlayarak daha genellenebilir sonuçlar elde edebilir.

Son olarak, bu çalışma resimli öykü kitaplarının Çevre Okuryazarlığı'nı temsil etme potansiyelini sıklık ve yüzdeler açısından analiz etmiştir. İleriki araştırmalarda daha derin sonuçlar elde etmek amacıyla Çevre Okuryazarlığı olgusu nitel araştırma yöntemleriyle incelenebilir. Ayrıca, bazı uluslararası çalışmalar olmasına rağmen, Türkiye'de hizmet içi okul öncesi öğretmenleri veya okul öncesi öğretmen adayları ile yapılmış herhangi bir çalışma bulunmamaktadır. Okul öncesi öğretmenleri resimli öykü kitapları ile çocuklar arasında bir köprü görevi görmektedir. Metinler ve resimlemeler vasıtasıyla aktarılan mesajlar okul öncesi öğretmenleri sayesinde çocuklara birebir ulaşabilmektedir. Öğretmenin Çevre Okuryazarlığı seviyesi, çocuklara çevre kavramlarını öğretme becerisiyle ilişkilidir (Aini ve Laily, 2010; Goulgouti vd., 2019; Liu vd., 2015; Pe'er vd., 2007; Yavetz vd., 2009). Bu nedenle, okul öncesi öğretmenlerinin Çevre Okuryazarlığı düzeylerinin belirlenmesi ileride yapılacak araştırmalar için değerli bir araştırma konusu olabilir.

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YAZARIN / AUTHOR

Soyadı / Surname : Özgül
Adı / Name : Tuba
Bölümü / Department : Temel Eğitim, Okul Öncesi Eğitimi / Early Childhood Education

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