PRESCHOOL CHILDREN'S ATTITUDES TOWARDS SELECTED ENVIRONMENTAL ISSUES

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ABSTRACT

PRESCHOOL CHILDREN'S ATTITUDES TOWARDS SELECTED ENVIRONMENTAL ISSUES

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The purpose of this study is to explore preschool children's attitudes towards environmental issues in terms of consumption patterns, environmental protection, recycling-reusing, and living habits and to investigate gender as a factor affecting environmental attitudes. The sample of the study is comprised of 40 preschool age children living in Ankara, Turkey. The research has been realized by qualitative design and the data were collected through interviews. The interview questionnaire was adapted from "The Children's Attitudes toward the Environment Scale-Preschool Version" (CATES-PV) (Musser & Diamond, 1999) and contains 15 interview questions and sub-questions. The

adapted version of the questionnaire was supported with a picture format, designed by the researcher, which explicitly defines each item. Findings of this study indicated that, most of the 5-6 years old children of this study have ecocentric attitudes towards environmental issues for the all dimensions, at a first glance. However, children's explanations as a result of in depth interviews were evaluated as anthropocentric for such attitudes. Finally, no difference was detected according to gender regarding to environmental attitudes of preschool children.

Keywords: preschool children, attitudes towards environment, ecocentric, anthropocentric.

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ÖZ

OKUL ÖNCESİ DÖNEMDEKİ ÇOCUKLARIN FARKLI ÇEVRE KONULARINA KARŞI TUTUMLARI

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Bu çalışmanın amacı okul öncesi dönemdeki çocukların tüketim kalıpları, çevreyi koruma, geri dönüşüm-geri kullanım ve yaşam alışkanlıkları gibi çevresel konulara karşı tutumlarını ve cinsiyetin bu tutumlar üzerindeki etkisini incelemektir. Bu çalışma, Ankara'da yaşayan 40 okul öncesi yaş dönemi çocuğunu kapsamaktadır. Çalışmada nitel araştırma teknikleri kullanılmış olup, veri görüşmeler aracılığı ile toplanmıştır. Görüşme soruları "The Children's Attitudes toward the Environment Scale-Preschool Version" (CATES-PV) (Musser& Diamond, 1999) isimli ölçekten uyarlanmıştır. Ölçek 15 temel soru ve alt sorulardan

oluşmaktadır. Uyarlama sürecinde Türkçeye çevrilen ölçek, her bir soruyu tanımlayan resimlerle desteklenmiştir. Bu çalışmanın bulgularına göre, okul öncesi dönemdeki çocukların bir çoğu, çevresel konulara karşı ilk bakışta ekosentrik tutumlar göstermiş olup, yapılan analizler sonrasında çocukların bu tutumlarının altında yatan nedenlerin antroposentrik olduğu anlaşılmıştır. Çocukların çevresel tutumları cinsiyete göre değişiklik göstermemektedir.

Anahtar kelimeler: Okul öncesi dönemdeki çocuklar, çevreye karşı tutum, ekosentrik, antroposentrik.

To My Grandmother

and

My Brother

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CHAPTER I

INTRODUCTION

1.1 Introduction

Early years of life are regarded as the sensitive period in which human development reaches its optimal stage (Morrison, 2001; Mustard, 2000). The rationale supporting this claim is the recent brain research and research on cognitive development referring critical importance of early years to start learning in life (Berk, 2003; Nuthbrown, 2006). Value of early years on human development was revealed in the research area of early childhood education more than enough (Kagıtcibasi, Sunar, Bekman & Cemalciler, 2005; Rushton & Larkin, 2001; Rutter, 2002).

In a similar way, young children are in a receptive period for personality development (Keenan & Evans, 2009). Individuals develop their basic values, attitudes, skills, behaviors and habits, in early years of life, which may be long lasting. Since early childhood education consists of bases for intellectual, psychological, emotional, social and physical development and lifelong learning, it has an enormous potential in fostering values, attitudes, skills and behaviors that have key role in preventing environmental problems (Samuelsson & Kaga¸2008).

In the recent years, environmental problems have become a great threat not only for people but also for the entire planet. Some of the environmental problems include but not limited to global warming, climate change, ozone depletion, habitat degradation, species extinction, loss of biodiversity, and

population growth. Human activities are regarded as the main cause of these environmental problems that have become a serious threat for both human being and all species by endangering quality of life and corrupting environmental stability (UNESCO, 1978).

Several environmental problems and their negative outcomes have been realized by the nations and as a result many national and international conferences have been held and many treaties were concluded all over the world. Beginning from 1948, with the International Union for Conservation of Nature (IUCN) Conference summoned in Paris, to 2003 The Kiev Environment for Europe Conference, environmental education was highlighted as the key element to protect environment and to prevent environmental problems (Palmer, 1998; Scoullus & Malotidi, 2004). Moreover, in the Tbilisi Conference it was declared that environmental education should be integrated into all levels of formal education beginning from early childhood (UNESCO, 1978).

The rationale for environmental education in early years was based on two major premises (Wilson, 1996). The first and foremost, base for environmental education in the early childhood is the value of interaction between natural environment and young children. Children' earlier and direct experiences with nature enhance their learning process and quality of life (Davis, 1998). Children not only gain a sense of wonder but also learn by doing happily in natural environment. Since Reggio Emilia approach regarded environment as the third teacher, it should be underlined that connections with environment increase children's

wonder, interest, curiosity and enjoyment about nature as well as provide a variety of opportunity for children to force their learning process (Didonet, 2008; Wilson, 1996).

The next claim supporting the idea of environmental education in early childhood was based on critical importance of early years. Early childhood is a sensitive period to adopt and enhance a sense of caring for environmental issues. Particularly, preschool years are the time that children develop environmental attitudes (Biriukova, 2005) as well as environmental attitudes formed during early years are life- long and have resistant to change (Nikolaeva, 2008). Hence, early years of life should be regarded as having critical importance to gain environmental attitudes and environmental education in early childhood is the way of fostering environmental attitudes of children (Basile, 2000). Thus, as Didonet (2008) concluded:

> If we desire that adults, in the next generation, respect nature and care for the planet, it is important to include now, in the early childhood education curriculum or program the study of nature, and the interdependence between human beings and the environment (p. 26).

This premise of early childhood environmental education is the rationale for the current study. As mentioned, the structure of environmental attitudes built in the early years is the strong and permanent roots for one's entire life (Biriukova, 2005). Miller and Levine (1996) defined environmental attitude as "*evaluative tendency regarding some feature of the environment and can typically be phrased in terms of like and dislike or favor and disfavor*" (p. 70). According to Thompson and Barton (1994), two different bases underlie environmental attitudes: ecocentric

and anthropocentric. Ecocentric attitudes value nature for its own sake and refer to empathy with nature while anthropocentric attitudes advocate protection of environment in order to maintain and enhance human life. To illustrate, having respect to animals since they are important and beautiful components of the world is an example of ecocentric attitudes. However, if the underlying reason of respecting animals is to derive benefit from them, it refers anthropocentric one. In this regard, Thompson and Barton (1994) emphasized that ecocentric- anthropocentric bases are the predictors of environmental behavior. As referred by Fishben and Ajzen (1975), attitudes have ability to predict behavioral intentions; Thompson and Barton (1994) asserted that ecocentric individuals are more likely to behave in an environmentally-friendly way supporting environment while anthropocentric individuals are less likely in a way supporting environment unless existence of a threat for human centered values. In this respect, early childhood hold key for environmental behaviors as early years are receptive for the creation of ecocentric environmental attitudes (Ajzen, 2001; Biriukova, 2005; Grodzinska- Jurczak, Stepska, Nieszporek & Bryda, 2006). What is more, when it was declared that environmental education aims to bring up citizens who adapt environmentally friendly behaviors (UNESCO, 1978); attitudes toward environmental issues become critically important in the early years of life (Davis, 2009). Despite given emphasis on environmental attitudes research in early childhood education, there is little evidence to clue preschool children's attitudes toward environmental issues. Furthermore, in the literature there is a gap to investigate factors that affects preschool children's attitudes towards environmental issues.

Many factors were reported to affect environmental attitudes of preschool children and gender differences was most frequently referred one. In spite of gender insignificance reported in quantitative studies, this study intended to research gender impact by the means of in depth investigation on preschool children's attitudes towards environmental issues. In particular, the current study targets to explore preschool children's environmental attitudes based on ecocentric and anthropocentric approaches and to find out the effect of gender on children's attitudes towards environmental issues.

1.2 Statement of the Problem

Despite the fact that early childhood education researchers have not been interested in environmental issues and in a similar way environmental education researchers have not extensively considered preschool children as participants of a sustainable society, early childhood education has a fundamental role in achieving goals of environmental education in terms of upbringing ecocentric attitudes towards environmental issues (Davis, 2009; Siraj- Blatcford, 2009). The preliminary survey (1996- 2007) of a number of international research journals in early childhood education and environmental education revealed that fewer than 5 % articles was published over a 12- year period underlying absence of studies in this research area (Davis, 2009). The current research aimed to make a contribution to the early childhood environmental education research area describing preschool children's attitudes towards environmental issues and to inspire researchers to produce a background for environmental education in early childhood.

1.3 Purpose and Significance

This study intended to describe preschool children's attitudes towards environmental issues by the means of one to one interviews. Also, this research aimed to examine effect of gender on preschool children's environmental attitudes. Children's Attitudes towards Environment Scale- Preschool Version (CATES-PV) (Musser & Diamond, 1999) was utilized to develop interview protocol. In this scope, environmental issues were regarded as consumption patterns, environmental protection, recycling and reusing and living habits. In order to grasp children's attitudes towards these environmental issues, the specific research questions which were tested are described as following:

1. What are preschool children's attitudes towards environmental issues?
    a. What are preschool children's attitudes towards consumption patterns?
    b. What are preschool children's attitudes towards environmental protection?
    c. What are preschool children's attitudes towards recycling and reusing?
    d. What are preschool children's attitudes towards living habits?
2. What is effect of gender on children's attitudes towards environmental issues?

Investigation of preschool children's attitudes toward environmental issues is very significant since environmental attitudes develop during early years and they resist changing in

life- long process. Explanations of these research questions also reveal the meaning of attachment between nature and young children. Since having close interaction with nature enhances children's healthy psychosocial development and encourages children to develop ecocentric attitudes towards environmental issues. Investigation of children's existing attitudes towards environmental issues is regarded as valuable to plan the way which may support children to interact with nature. Moreover, this research guide educators how to encourage young children to attain ecocentric attitudes towards environmental issues. Moreover, early childhood education program administered in Turkey is very appropriate to integrate environmental issues into education process (Ministry of National Education, 2006). However, there was little emphassis on environmental issues. Thereby, it is believed the findings of the current study also made a contribution to existing early childhood education program in terms of environmental education.

Last but not least, the current study intended to describe role of gender as a predictor of preschool children's environmental attitudes. Except one, previous quantitative studies reported that gender was not significant to explain preschooler's attitudes towards environmental issues. In this regard, as an important addition, the current study examined role of gender on environmental attitudes of preschool children. Moreover, in this regard, as mentioned in Agenda 21, gender issues should be more refered in environmental studies since contribution of females in the process of upbringing environmentally friendly children holds key role for a sustainable world.

1.4 Definition of Important Terms

The following terms need to be defined for the purpose of the study:

Environmental Attitudes: Environmental attitudes refer to evaluative tendency regarding some feature of the environment and can typically be phrased in terms of like and dislike or favor and disfavor (Miller, 1996).

Ecocentric Attitudes: Ecocentric attitudes mean to value nature for its own sake (Thompson & Barton 1994).

Anthropocentric Attitudes: Anthropocentric attitudes mean to value nature because of material or physical benefits it can provide for humans (Thompson & Barton, 1994).

Consumption Patterns: The combination of qualities, quantities, acts and tendencies characterizing a community or human group's use of resources for survival, comfort and enjoyment (EIONET, 2010). In the current study, consumption patterns referred to saving water, paper and electricity.

Environmental Protection: Environmental protection is a practice of protecting the environment, on individual, organizational or governmental level, for the benefit of the natural environment and (or) humans (EIONET, 2010). In the current research, environmental protection referred protection of animals, plants and environmental surroundings.

Recycling and Reusing: Recycling involves processing used materials into new products to prevent waste of potentially useful

materials, reduce the consumption of fresh raw materials, reduce energy usage, reduce air pollution water pollution by reducing the need for "conventional" waste disposal, and lower greenhouse gas emissions as compared to virgin production (EIONET, 2010). In this study recycling and reusing was sketched by reusing of old materials, using recycling bin and separating recyclable materials.

Living Habits: A way of life or style of living that reflects the attitudes and values of a person or group (EIONET, 2010). In this study living habits described by playground and residence preferences as well as environmental pollution.

CHAPTER II

REVIEW OF LITERATURE

In this chapter, a review of literature relevant with young children and environmental issues were presented. In the first section, early childhood education that revealed the importance of early years in development was presented. The second section was about the need for environmental education in early childhood. In this section, firstly environmental education was introduced and then the rationale to start environmental education in early years was reported. In the third section, issues about environment and young children were reflected. In this section, environmental attitudes of preschool children and factors that affect their environmental attitudes were mentioned. And the final section described environmental education in early childhood education in Turkey.

2.1 Early Childhood Education

Improvement in neuroscience research has made valuable contributions to the research area of early childhood education (Begley, 1996; Mareschal & Tan, 2007; Morrison, 2001). Current studies conducted about brain and cognitive development and so increasing knowledge about brain science became pioneer for all other improvements in early childhood education (Harvey, 1999; Nuthbrown, 2006; Spodek, 1993; Wolfe & Brandt, 1998). Brain research proposed that there is a positive correlation between high quality stimulation and the synapses development that forms specific areas of the brain (Wasserman, 2007). For example, children who are provided opportunity to have

interaction with natural environment will probably have a sense and respect of animals and plants (Gardner, 1993). On the other hand, if children are provided inferior stimulation during early years, synapses development will delay; hence, the brain will have fewer cellular connections. Indeed, children' emotional, intellectual and social skills should be supported in critical years of life to make them reveal optimal stage of their lifelong potential (Rushton & Larkin, 2001).

With reference to the rapid increase in the development of the number of synapses between neurons in early childhood and the importance of critical periods when sensory and motor systems in the brain require experience for maximum development; recent scientific researches disclose that babies and young children are born with the capacity to understand a lot more than was previously thought to be the case. In other words, it is understood that the earlier children are taught the more they learn and the early years are regarded as the critical period when the most significant developments occurred in a person's life (Kağıtçıbaşı, Sunar, Bekman, 2001; Mustard, 2000; Nuthbrown, 2006; Spodek, 1993).

This point is valuable to reveal effect of enriched environments on children's capability to learn (Tekmen, 2005; Scott, 2004). Enriched environments including educational experiences alter brain structure and this process enhances whole developmental domains of young children (Bredekamp & Copple, 1997; Marshall, 2004). On this account, early childhood education that provides a variety of learning environments for young children plays a key role in the critical period in which the most

significant developments occurred in a person' life. Moreover, the main aim of the early childhood education is to enhance cognitive, language, social- emotional, psychical, and psycho-motor and personal development of children who are less than eight years of. It's a systematic and planned education process and intends to reveal existing potential of children (Essa, 2005; Gordon & Browne, 2007; Morrisson, 2001).

In early childhood education environments, children are provided many learning opportunities that enhance their multi-facet development (Katz, 1993; Morrison, 2006; Spodek, 1993). Relevant literature provides a number of evident to support this claim. Recent studies about effects of early childhood education programs on cognitive development indicated that early childhood education and care enhance children's cognitive development in both short and long term (Howes, Burchinal, Pianta, Bryant, Early, Clifford, et al., 2008; Kim, & Suen, 2003; Siraj-Blatchford, 2004; Pauen, 2002). Additionally, positive outcomes of early childhood education on social- emotional development were reported (Jacobsen & Hofmann, 1997; Niles, 2004). Similarly relevant literature introduced valuable affects of early childhood education on language and literacy development (Zvoch, Reynolds, & Parker, 2008; Wasik & Bond, 2001).

In a similar way, young children are in receptive period for personality development. Individuals develop their basic values, attitudes, skills, behaviors and habits, which may be long lasting, in early years of life. Since early childhood education consists of bases for intellectual, psychological, emotional, social and physical development and lifelong learning, it has an enormous

potential in fostering values, attitudes, skills and behaviors that support environmental issues (Basile, 2000; Biriukova, 2005; Davis, 1998).

2.2 The Need for Environmental Education in Early Childhood

2.2.1 Environmental Education

Environmental problems are the biggest challenge of societies in twenty first century (Sloep & Blowers, 1996). A variety of environmental problems now affect our entire world. Some of these problems that threat the world are water shortages, soil exhaustion, loss of forests, air and water pollution, degradation of coastlines, acid rain, global warming, hazardous waste, ozone depletion, overpopulation, and rain forest destruction (Hungerford, 2001; Palmer, 1998). Environmental problems are not only problems of technology and industry, of ecology and biology but also they are also problems of society. Humans are not only the major creators of environmental problems but also who have the key role in solving them (Heimlich, 2002). In the 21th century, humankind has extensively utilized a variety of technological improvement and economical advance. At the same time, they face a variety of threats such as energy shortage, forest destruction, animals and plant extinction, pollution and urbanization problems (Scoullus & Malotidi, 2004). For this reason, environmental problems have become one of the biggest challenges of this century in all over the world (UNESCO, 1978; UNESCO, 1992). These environmental problems effecting today and future of 7 billion people have evoked governments to

make cooperation about facing environmental challenges for years.

The modern approach for struggling environmental problems has started since 1970. Twenty million people across America celebrated the first earth day on April 22 and The National Association for Environmental Education (NAAEE) was founded in the following year. In 1972, the United Nations Conference on the Human Environment was held in Stockholm and introduced Recommendation 96 that addressed environmental issues worldwide calling for provision of environmental education.

1975 was the year of Belgrade Charter that outlined basic structure of environmental education. As a precise mean, goals, objectives, and guiding principles of environmental education were described in Tbilisi. The proposal of the Intergovernmental Conference that was held by the United Nations Educational, Scientific and Cultural Organization in cooperation with the United Nations Environment Program has still guided many environmental educators today. Environmental problems and role of education in solving environmental problems were pointed out in the first Intergovernmental Conference on Environmental Education convened by UNESCO was held in Tbilisi in October 1977 (UNESCO, 1978). In Tbilisi Conference, it was emphasized that environmental education should be integrated all grades of formal and non- formal education. In the Tbilisi Conference, aims of environmental education were defined as following:

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

After 15 years later than Tbilisi, United Nations Conference on Environment and Development that was held in Rio de Janerio, Brazil on June 1992 and introduced Agenda 21. Agenda 21 addressed major environmental issues of today's world and provides guideline to the global community to be prepared for the challenges of the new century (UNESCO; 1992).

Agenda 21 referred changing consumption patterns and dealt with energy consumption, environmental protection, and waste management. In the Agenda 21, "freshwater" was addressed as one of the most critical environmental issues that the planet faces in this century. Protection of the quality and supply of freshwater resources, management and use of water resources, freshwater shortages, and water pollution has been significant in the field of Agenda 21 (UNESCO, 1992).Water resources have major environmental and economical importance. Excessive water use cause many environmental problems.

Similarly, energy consumption is also a hot topic of environmental concern. Agenda 21 endorsed by The United Nations Conference addressed a variety of environmental issues including energy. The energy related goals and activities in Agenda 21 focused on improving electricity production and consumption efficiencies. The electricity sector is considered as one of the major pressures to the environment. Since it is the most polluting energy-related activity, it was aimed to reduce the growth rates of primary electricity consumption and to improve the efficiency of electric power plants, as well as electricity transmission and distribution efficiencies (UNESCO, 1992).

Another, issue referred in Agenda 21 was deforestation (UNESCO, 1992). Bearing in mind consumption habits of people in this century, paper use that is a fundamental part of life may be regarded as first. Each year, the world produces more than 300 million tons of paper. Thus to produce a single sheet of paper, hundreds of trees from around the world are destroyed. Moreover, paper manufacturing requires use of chemicals, energy and water. In summary, since paper consumption diminishes natural resources and increases greenhouse gases (GHGs) in Earth's atmosphere, people should reduce unnecessary paper consumption in order to limit negative impacts of paper production on the ecosystem, such as forest destruction and use of chemical products. Therefore, paper use should be limited and recycled paper should be used (UNESCO, 1992).

With relevant to changing consumption patterns of people, Agenda 21 promoted conversation and management of resources for development and referred recycling and reusing of waste. Encouragement of public awareness for reducing, reusing and recycling wastes was also addressed (UNEP, 1992).

Report of The United Nations Conference on Environment and Development (1992) also mentioned the importance of environmental protection issues. The natural environment with all components is threatened by human activities. As a result of humankinds' living habits, biodiversity corrupts and this corruption harms to human mostly. For instance, people usually deprive of natural areas to live. Therefore, the main goal of the objectives and activities in the relevant chapters of Agenda 21 is to improve the environmental protection. One of the recommendations of Agenda 21 (1992) was to promote positive attitudes towards environmental issues as mentioned above.

Similar with Tbilisi Declaration (1977), Rio Conference (1992) proposed the critical importance of environmental attitudes on struggling environmental problems. Another common point of these two declarations is their consensus on environmental education.

Environmental education provides educators a variety of opportunities to guide learners. These environmental education sources help learners from all ages gain knowledge, explore values and develop attitudes about life and world. Moreover, individuals learn how to question and analyze an issue; how to solve a problem; and how to develop personal responsibility to

feel responsible for environment (Monroe, Andrews & Biedenweg, 2007)

What's more, environmental education is regarded as the key tool of strengthening environmental attitudes. In other words, these recommendations promote environmental education to enhance human' environmental attitudes and behaviors. The way of strengthening positive attitudes towards environmental issues, environmental education is suggested to be integrated into all disciplines and all levels of education starting from early childhood.

2.2.2 Environmental Education in Early Childhood

Environmental education in early childhood is two- fold. First and foremost, enriched child development is influenced by healthy interactions with environment. Last but not least, early childhood years are sensitive to adopt positive environmental attitudes (Wilson, 1996). In the light of the literature, it is possible to point out the linkage between environmental education and early childhood education.

The roots of environmental education in early childhood go back to Jean- Jacques Rousseau who introduced the term "naturalism". Rousseau recommended that education should based on nature, include a sense of environment, and utilize opportunities of nature (McCrea, 2006). According to Rousseau, the interaction between nature and people is the source of healthy development and education is the tool of this process. Rousseau stated that natural education encourages happiness, spontaneity and curiosity and children learn best in enriched

environments. In addition, Rousseau thought that the school settings should be integrated into natural environment to meet children's needs providing them opportunities to have experiences with concrete materials. According to Rousseau children really learn only from first hand interaction (Gordon & Browne, 2007).

On the side of constructivism, Piagetian theory proposed that children learn actively by manipulating their environment and construct knowledge with hands on experiences. His theory was regarded as environmental since he believed that experiences with enriched environments that children have will directly influence how they develop (Essa, 2005). In other words, children derive their reality by exploring world; and they create their beliefs, values, and attitudes (Piaget, 1959). This construction process proceeds based on a sequence that Piaget described in four general stages. Early childhood years fits preoperational stage of Piaget's cognitive theory. Children in this stage are dominated by egocentrism that means to see everything from one's own perspective. In preoperational stage children may have difficulty to grasp meaning of anything except themselves (Thomas, 2005).

On the side of Social Cognitive Theory; Bandura highlighted the relationship between interaction with environment and development. According to Bandura (1977), children's learning is influenced by experiences and observations. In other words, what people see and experience forms their development (Bandura, 1977). In other words, humans development enhance through observation and performance. Beside cognitive and

personal factors, environmental surroundings also affect the children's learning process.

Similar with Piaget and Bandura, John Dewey promoted learning by doing. He stressed the value of experience on education (Dewey, 1938). As a follower of Dewey' progressive education movement, Reggio Emilia regarded environment as third teacher and believed its' valuable role in early childhood education (Morrison, 2001).

Bronfenbrenner also valued environment and emphasized crucial role of children's social and physical settings in their development. Children's development is greatly dominated by forces outside them (Gordon & Browne, 2007). According to Bronfenbrenner (1986), settings such as climate, space, home, school and playground, in which a child spends time, and the relationship with those settings, as well as the social structures like family, culture and the larger society influence and supports children's development.

As proposed, healthy child development and enriched learning experiences require positive and hands on interaction with environment. Environment is an outdoor classroom that enhances children's development (Dinçer, 1999). Dealing happily with animals, plants, flowers, water, the land, wind, etc. enrich their learning process and evoke their curiosity and interests.

In this regard, Davis (1998) evaluated environmental education in three approaches: Education in, about, and for the environment. Education in environment refers to direct experiences with environment. To illustrate, exploration in the

outdoor like caring animals and plants, observing variations in weather; water and sand play like making objects by mud; field trips like walking in a rainy day are the examples of activities concerning environmental education. These education activities are also activities that is integrated and practiced in early childhood education (MONE, 2006). Similarly, education in environment aims to enhance positive feelings and attitudes toward nature and natural elements, which are basic elements of a high-qualified early childhood education program (Davis, 1998).

Education about the environment includes basic terms and concepts about environmental issues focusing on mainly cognitive aspect (Scoullos& Maloditi, 2004). This process enhances necessary knowledge and understandings of environmental issues. In fact, ecological principles as the water cycle, the oxygen cycle, reducing-recycling- reusing, energy consumption patterns, how plants grow, the effect of detergents in streams, and the importance of clean water are some of the issues of education about environment. Young children should be provided opportunity to understand these concepts and their value for protecting world. For example, playing water is an amusing educational activity for children; however, children should be thought that clean water is a valuable and limited resource; therefore, children should not waste it.

As a further step, education for environment aims the development of necessary attitudes and behaviors toward environmental issues going beyond to acquire knowledge (Scoullos & Maloditi, 2004). Therefore, in early childhood

education classrooms, it is not adequate only to talk about water conservation strategies but also practices about water consumption should be integrated into daily routines and educational activities. Hence, children can adapt environmental attitudes.

As reflected experiences with nature not only enhance whole development of children but also help them recognize environment and develop positive attitudes towards environmental issues (Wilson, 1994).

2.3 Environmental Issues and Young Children

2.3.1 Environmental Attitudes

Attitudes related to environmental issues have been defined by Miller and Levine (1996) as "evaluative tendency regarding some feature of the environment and can typically be phrased in terms of like and dislike or favour and disfavour" (p.70). In other words, "what a person believes, understands, and feels about something, as well as the person's behavior towards it, is the person's attitude" (Rogers, 2003, p. 177). Attitudes can be based on three different sources of information namely cognitive, affective, and behavioral domains (Rogers, 2003). If an example is given based on this tripartite model of attitudes, attitudes toward environmental issues may be predicted by both what people believe (cognitive), what they feel (affective) and what they do (behavioral) (Pooley & O'Connor, 2000).

According to Thompson and Barton (1994) there are two underlying reasons of environmental attitudes. One of them is

ecocentrism that means to value nature for its own sake; and the other one is anthropocentrism that means to value nature for benefits of human. Ecocentric attitudes stand for plants and animals while anthropocentric attitudes based on human's benefits of nature. In other words, ecocentric point of view refers to protect environment as to value world itself and to propose that plants and animals have equal rights with human. On the other hand, anthropocentric point of view stands for benefits of human and pragmatically value environment. For example, people adopting anthropocentric point of view assume that energy should be consumed carefully because energy shortage decreases quality of life. Eco-centric individuals esteem nature for its own sake regardless of it' benefits for human. Conversely, anthropocentric individuals want to utilize benefits of nature to increase quality of life.

As Fishbein and Ajzen (1975) proposed attitudes are precursor of behaviors, Thompson and Barton (1994) claimed that eco-centric and anthropocentric attitudes are best determinants of environmental behavior. Indeed, eco-centric individuals have better connection with environment rather than anthropocentric individuals and they tend to behave in an environmentally friendly way.

In the literature, there are many studies (Grodzińska-Jurczak, Stępska, Nieszporek, & Bryda, 2006; Musser & Malkus, 1997; Musser & Diamond, 1999) that investigated attitudes toward environmental issues despite very few studies (Erten, 2002) that were conducted to inspire the underlying reasons of attitudes. Most studies (Grodzińska-Jurczak, Stępska, Nieszporek, & Bryda,

2006; Musser & Malkus, 1997; Musser & Diamond, 1999) did not report whether environmental attitudes are developed in favor of the environment or for the benefit of the people. To illustrate, Erten (2002) investigated that 82% of families warn their children to save energy at home. When the underlying reason was asked to families, they reported their economical concern in terms of expensive bills rather than environmental protection.

Environmental problems in terms of shortage of energy, environmental pollution and endangerment of living things will continue to threat not only all living things but also our planet. On the condition that anthropocentrism is not dominated, an ecological cries may arise that will not be possible to overcome (Biriukova, 2005).

Since early childhood is a receptive period for cognitive, social-emotional, and physical development, it has an enormous potential in creation of attitudes in early years. The first years of life are the most favorable ones for developing attitudes and values that form the basis of personality and consist of strong and permanent roots of entire life (Ajzen, 2001; Birioukova, 2005 & Nikeolava, 2008). According to Basile (2000), children start to recognize environment and develop attitudes toward environment beginning from preschool years. Moreover, in the literature, it was reported that if children do not develop positive attitudes towards environmental issues in the early years of life, they have risks not to develop such attitudes later in life (Basile, 2000; Tilbury, 1994; Wilson, 1993 & Wilson, 1994). Moreover, as highlighted in the literature, it is very difficult to alter negative environmental attitudes that were formed in early childhood

(Blatchford, 2009; Davis, 2009; Domka, 2004 & Wilson, 1993). For this reason, it is important to force ecocentric attitudes of preschool children toward environmental issues.

Environmental education aims to bring up individuals who adopt ecocentric attitudes towards environmental issues; hence, environmental education in early childhood is the way of forming ecocentric environmental attitudes. Therefore, attitude development of preschool children towards environmental issues is a valuable rationale to start environmental education in early years.

Despite gaps in the relevant literature, studies support this claim as presented below.

Jeronen (2002) regarded environmental education as the key method of fostering positive attitudes toward environmental issues. Children who were enrolled in an environmental education program reflected their positive ideas about environmental issues. For example, 7-8 years old children told that they like flowers, trees, animals. In addition, in this study, children's attitudes toward environmental destruction and endangered animals reflected their anxiety about future of nature. Children (7-8 years old) talked about litter spread over the land and endangered animals, especially whales. Also, children described their interest in birds and their nests.

Robertson (2009) explored the positive effects of a nature preschool on children's attitudes towards environmental issues conducting a qualitative research. Participants of this study were 10-12 years old children who attended in the nature preschool

education program when they were 4-5 years old. Researcher investigated that environmental attitudes of children were affected by the nature education program that they were enrolled in, even several years after leaving program, participants who attended in nature school rated higher in nature connection scores than their peers who was not enrolled in such a program. And these participants have prolonged their positive attitudes towards environment since many years.

Kidd and Kidd (1990) asserted the significance of childhood environmental education and experiences with animals on individuals' current attitudes towards environmental issues. Using the Pet Attitude Scale which was completed by 227 Japanese students and 174 British students, researchers investigated that pet ownership in childhood as well as contact with other animals had significant effect on current attitudes towards pets and other animals. Moreover, they found some differences between Japan and the UK: in childhood, and reported that the British students had had significantly more pets and more animal-related experiences, such as visiting animal shelters and livestock farms, than had the Japanese students. Their current attitudes were reported also to be more positive, and they were mentioned to show a greater interest in animal welfare issues than did the Japanese students. In addition, researchers reported that in both countries there was a positive association between childhood pet-keeping and current favorable attitudes to pets.

Bryant and Hungerford (1976) conducted an experimental research with 34 preschool children. Their purpose was to

explore impact of environmental education on preschooler environmental concept. Researchers investigated that environmental education enhanced preschool children's concepts about environmental issues.

In another experimental study, Jaus (1984) investigated positive effects of an intervention about environmental education on elementary school student's attitudes towards environmental issues. Children were given pre- and post-tests before and after receiving two hours of instruction related to environmental issues. In this study, it was reported that environmental attitudes of experimental group showed significantly more positive attitudes than control group. As a result of follow up study conducted after two years, children were evaluated as sustaining their positive attitudes towards environmental issues.

In Poland, early childhood environmental education research was cited in Domka (2004, p. 261). Fratczak (1994) investigated 320 preschool children's environmental knowledge and investigated that 60 % of them had idea about environmental protection and these children were reported to name some plants and animals. In addition, these children were able to mention some of the rules of environmental protection like "do not pick flowers" "do not break branches" and "feed the birds".

Other research that cited in Domka (2004, p.261) revealed that every third preschool child reflected their pessimistic point of view about water consumption and they described their anxiety about a waterless world. In addition, these children were

reported to desire to live where there are a plenty of plants and animals.

Domka (2004) investigated that children' attitudes towards animals and concluded that children did not like some animals like wolves, amphibians, reptiles and spiders and they thought that animals should always work for people. According to Domka (2004), children see the environment from the point of view of the human.

Palmer (1995) explored understandings of preschoolers about waste management. Results of Palmer's study revealed that 49% of 4-year-olds managed waste product and they collected them in an organized manner and also 23% of 4 years-old children knew about the concept of recycling and they had an idea what it means. The same study showed that 21 % of 6 years-old children recognized what materials are recycled or not.

Palmer, Grodzinska- Jurczak, and Suggate (2003) revealed that environmental education programs are effective on environmental attitudes towards reusing and recycling in a qualitative study. To illustrate, researchers conducted a cross-cultural study and compared the differences between English children who were enrolled in a structured environmental education program and their Polish accompanies who did not. In England interviews were conducted over a period of several years from 1994 to 2000 and a sample of 137 four-year-olds (65 girls and 72 boys) and 138 six-year olds, (63 girls, and 75 boys) were interviewed by researchers. In Poland, interviews were conducted in 2000 and 2001. The sample size was 95 four year-

olds (43 girls and 52 boys) and 93 six-year-olds (47 girls and 46 boys). Researchers reported that participants were interviewed two times during research course and indicated that almost all of the children from the age of 4 in both countries explained that waste materials should not be thrown on the ground and could give a reasonable answer as to why this is so. A small number of Polish and English 6-year-olds thought it was impossible to use any again. The Polish children were reported to think about possible second uses with the object being unchanged in form whereas the English children were reported to be aware that the form of the object might be changed in a machine or factory.

2.3.2 Factors Effecting Environmental Attitudes during Early Childhood

In the literature there is little research investigating the factors that affects preschool children's attitudes towards environmental issues. In the following part, studies were presented that examined effecting factors of young children's environmental attitudes.

Haktanır and Çabuk (2000) investigated 4- 6 years old preschool children's perceptions and ideas about environmental issues. The research included 80 children from 12 private preschools. Researchers utilized a scale that were developed by the researchers and rated children's answers to 18 environmental problem cases. In the study, different statistical techniques were used to examine the effect of gender, age, and parental variables. According to results of this study, social economic status was found to be related to children's perceptions about

environmental issues and the children belonged to upper social economical status were reported to be have higher scores on environmental perception. Environmental perception of children who had a sibling was found lower than single children. And children whose father had a job in private sector were evaluated as to have a more positive sense of environmental perception. The researchers reported the significant difference among children environmental perception. Children whose mother had a graduate degree scored higher than the others. Additionally, gender, age, family structure, mother's job, ages of parents, and father's academic background was found insignificant in terms of children's perceptions on environmental issues.

Similarly, Grodzinska- Jurczak, Stepska, Nieszporek and Bryda (2006), provided useful knowledge about preschool children's attitudes toward environment and environmental problems in Poland. The study covered 686 parents and 674 six year olds from 30 preschools. Researchers collected the data by using a questionnaire called Children's Attitudes toward Environment Scale- Preschool Version (CATES- PV). The results of the study showed that most of the children hold environmental friendly attitudes. Almost all of them were reported to be respectful toward animals and plants (95.7 %), careful about cleanliness of their surroundings (95.1 %), and mindful on saving water (95%). Moreover, the majority of them were reported to utilize old items (e.g. giving old toys to other children), help the animals in winter as well as many of them declared that save energy and paper. Also, 40.9 % of children used environmental friendly transportation and 30 % of them segregated waste at

home. What's more, preschool children's attitudes toward environment were reported to be depended on their place of residence. In fact, most of the children (67.3%) having positive environmental attitudes were reported to live in rural area. As a result, this study revealed us Polish preschool children's attitudes toward environmental issues were relatively positive.

In the study from USA, Musser and Diamond (1999) developed and administered the scale called Children's Attitudes toward Environment Scale- Preschool Version (CATES- PV). Researchers administered the scale to 42 preschool children (25 girls and, 17 boys). Children's ages were reported to ranging from 40 to 37 months. The preschool program in which children enrolled was reported to have activities concerning animals and plant; however the program was mentioned not to include any structured environmental curriculum. The questionnaire was administered to each child by face to face conversation and results were reported by using frequency tables. The results indicated that children's attitudes towards environment were generally positive. In addition, cross- break tables were conducted in order to investigate relationship between children's attitudes and independent variables in terms of age and gender. As a result, while children's attitudes were moderately correlated with age, $r\ (40) = 37$, $p<.01$, their attitudes did not differ in relation to their gender, $F\ (1, 40) = 2.41$, (Ms= 2.87 and 2.97), for girls and boys respectively.

Kesicioğlu and Alisinanoğlu (2008) conducted a study to introduce the natural environment experiences provided to the preschool children by their parents, and children's attitudes

towards environmental issues. The study included 353 preschool children of 60-72 months, enrolling in preschools affiliated to the Ministry of National Education. Researchers utilized the Environmental Reaction Inventory as a scale and interpreted findings of the study at "0.05" significance level. Researchers conducted analyses by using the software "SPSS 15.0". Results of the study indicated that attitudes of the preschool children towards the environment do not differ based on residence in which they live, the education level of their parents, the income of the family, or the career of the parents ($p>0.05$). On the other hand, researcher found gender as a significant variable for their study ($p<0.05$)

2.4 Early Childhood Education and Environmental Education in Turkey

Up to this section, early childhood environmental education and its effect on environmental attitudes were presented. In this section, the existing situation in Turkey in terms of early childhood education and environmental education was introduced.

In Turkey, historical development of early childhood education (ECE) started at the beginning of nineteenth century and the first kindergarten was founded in 1915. Significance of ECE was accepted in 1961 with new education law and discussed as a separate branch in political debates. General Directorate for Early Childhood Education was founded in 1992 to implement the early childhood education programs and to meet the growing interest of society in early care and education. ECEGM is

responsible for editing, supervising and conducting early childhood education (ECE) services (Oktay, 1999; Aktan, 2005).

In Turkey, early childhood education has not been compulsory up to 2010; however, there are some pilot studies to make compulsory early childhood education for six years old children (Derman& Başal, 2010). Preschool Education service is given by a variety of institutions such as Ministry of National Education, universities, and foundations (Akçay, 2008; Derman& Başal, 2010; MONE, 2006). Although both public and private preschools differ in terms of organizational and administrational issues, education programs are planned based on the national curriculum of preschool education.

The national preschool education curriculum was developed for 36- 72 mounts children. Four basic aims of this child- centered curriculum were referred as below (MONE, 2006) :

1. Enhancing children' physical, cognitive, and emotion development and supporting children to acquire good habits.
2. Preparing children elementary education
3. Creating equal opportunity for disadvantaged children
4. Supporting children to have an accurate and fluent Turkish.

The curriculum refers whole development of young children and includes objectives and acquisitions for each developmental

domain. Educational activities are planned based on these objectives and acquisitions. Moreover, objectives and acquisitions of national early childhood education curriculum include themes to support environmental awareness of children and encourage them to use natural resources carefully. Examples of objectives and acquisitions that are related to environmental awareness are reflected below (MONE, 2006, p 27-28):

Social- Emotional Domain

Objective 9: Able to take responsibility in protecting and enriching life

- Able to use carefully the resource
- Able to obey rules
- Able to take care of living rights of other living things
- Able to take responsibility in caring and protecting of living things
- Able to explain the shared life with living things

Objective 12: Able to conserve beauties in the environment

- Able o say causes of conserving beauties in the environment
- Able to explain necessities in order to conserve beauties in the environment

- Able to take responsibility to protect beauties in the environment

Objective 13: Able to organize environment aesthetically

- Able to give example for solutions of environmental problems
- Able to organize environment in different ways
- Able to give example to beautiful or disturbing conditions in the environment

In addition to objectives and acquisitions referred above, the national preschool curriculum had recommendations for environmental awareness and environmental education of preschool children. In the curriculum, it is indicated that natural environment provides children a variety of stimulants that enrich their development. Children can acquire several abilities and they can develop a positive sense of environment purely discovering nature (MONE, 2006).

Gülay and Ekici (2010) analyzed the National Curriculum of Preschool Education (2006) in terms of environmental education. The researchers analyzed objectives, acquisitions, concepts and special days referred in the curriculum and investigated roots of environmental education. They utilized the content analyze technique and consulted 23 randomly selected environmental education and early childhood education specialist to fulfill expert opinion form analyzing National Curriculum of Preschool Education. The expert opinion form that consisted of 3 parts and 421 items was developed by researchers and 23 experts rated

items as “I agree”, “I do not know”, I do not agree”. According to results of this study, objectives and acquisitions of psychomotor domain was revealed that among five objectives and 46 acquisitions, no one was related to environmental education. In a similar way, language domain did not refer any objectives and acquisitions about environmental education. On the other hand, 33% of social- emotional domain objectives and 24% of social- emotional domain acquisitions was reported as related to environmental education. Similarly, cognitive domain includes 24% of objectives and 12% of acquisitions about environmental education. Moreover, self- care domain includes 80% of objectives and 58% of acquisitions referring environmental education. When the concepts included in the national curriculum of preschool education were explored, it was concluded that 29% of concepts was about environmental education. As a final result of this study, it was referred that 26.3 % of special day and weeks was related to environmental education whereas little research explored environmental attitudes of preschool children was presented.

Referring national early childhood education curriculum in Turkey, it can be seen that the national early childhood education curriculum aims to equip preschool children with the attitudes, values, knowledge, and skills necessary to protect plant, animals, and environment and to integrate environmental education into early childhood education.

As a result of the above summarized state of the literature survey, one can inferred that, there is a growing interest in studies relevant with environmental issues and young children

(Musser and Diamond, 1999); yet, relevant literature presents a gap. The preliminary survey (1996- 2007) of a number of international research journals in early childhood education and environmental education revealed that fewer than 5 % of the articles was published over a 12- year period (Davis, 2009). And the current situation in Turkey is in a need to be supplied by research. Therefore, the current study intends to fulfill the gap.

CHAPTER III

METHOD

This study aimed to explore forty 5-6 years old preschool students' attitudes towards environmental issues with an emphasis on gender differences. Participants were one to one interviewed and interview sheets were regarded as data source of this study. Qualitative research techniques were utilized for data analyses and children's attitudes towards environmental issues were grouped into two categories namely ecocentric and anthropocentric based on the framework of Thompson and Barton (1994). The content of this chapter is comprised of the methodology that was employed in the study presented: Design of the study, selection of participants, description of the instrument; data collection procedure; and description of analytical procedures used in the study.

3.1 Design of the Study

This study described preschool student's attitudes towards environmental issues and illustrates gender differences in children's attitudes towards environmental issues. Forty 5-6 years old preschool children were interviewed through a picture-scale with 15 questions and their attitudes toward environmental issues in terms of consumption patterns, environmental protection, recycling and reusing and living habits were deeply investigated. Interviews were transcribed and these transcribe reports composed data source of the current study. The study utilized the qualitative data analysis in order to grasp an in depth understanding of children's attitudes towards environmental

issues. Children's attitudes were categorized based on the framework of ecocentrism that values nature for its own sake and anthropocentrism that advocates protection of environment in order to maintain and enhance human life (Thompson & Barton, 1994).

Basic qualitative research design seeks for a very detailed understanding of an issue or a problem (Merriam, 2009). Moreover, as Creswell (2007) states, in a qualitative study, researcher strives for capturing profound explanation from a small number of samples and as Miles & Huberman (1994) reports, the ways employed to collect data in qualitative studies are interviews, observations and written documents and as stated by Patton (2002), it is the way of obtaining first hand records about the participant's experiences, understandings, and knowledge. Thus, along the lines of these suggestions about the qualitative research, the data of the current study were collected through interviews with 40 preschool students and analyzed employing qualitative research techniques for the aim of making a depth exploration about preschool children's attitudes towards environmental issues.

3.2 The Participants

The whole participants of the study were 5-6 years old preschool children who were attending in an early childhood education program supervised by Ministry of National Education (MONE, 2006). Eighteen boys and twenty- two girls were included in the current study and a total of forty participants were chosen from four public preschools in the Çankaya and Altındağ districts of

Ankara. Participants of this study were selected based on their convenience to researcher. Firstly, four public preschools were chosen from two different districts of Ankara based on their conveince to researcher. Then school administers were informed about research procedure and introduced ethical permissions taken by METU Ethical Commission and MONE Ethical Commission (Appendices[C]). Secondly, teachers were told about the study and their help was requested about taking written permissions of parents. Parents were informed and necessary written consents were taken from parents through teachers. After parental permission process was completed, a participant list was constructed and each appointment was planed with the help of preschool teachers in each school. All participants were belonged to middle social economical status. Table 1, Table 2 and Table 3 describe the characteristics of the participating students in terms of gender, age and school.

Table 1: Participant characteristics regarding gender

Students' Characteristics	n*
Gender	
Male	18
Female	22
Total	40

*n= Number of participants

Table 2: Participant characteristic regarding age

Students' Characteristics	n
Age	
5 years old	16
6 years old	24
Total	40

Table 3: Participant characteristic regarding schools

Students' Characteristics	n
Age	
Atatürk Kindergarden	8
Altındağ Belediyesi Kindergarden	9
Serpil Sümer Kindergarden	8
Şaziye Tekışık Kindergarden	15
Total	40

3.3 Instrument and Data Collection

The major data source of this study is the face to face interviews with forty preschool children. The instrument and the interview process will be presented below.

3.3.1 Interview Instrument

In this study, the interview questionnaire was adapted from "The Children's Attitudes toward the Environment Scale-Preschool Version" (CATES-PV) (Musser & Malkus, 1994). The Children's Attitudes toward the Environment Scale-Preschool Version (CATES-PV) was reported to be derived from the Children's Attitudes toward the Environment Scale (CATES) which was a 25-item scale developed by Musser and Malkus (1994). In the CATES-PV, 15 of the 25 questions, which were proper for developmental characteristics of 6 years old preschool children, from the CATES were selected by Musser and Malkus (1994). Researchers administered the scale to 42 preschool children. Scores on the CATES-PV ranged from 2.13 to 3.80 (M = 2.91, SD = .49). Reliability of the scale was regarded as acceptable

with a Cronbach's alpha of .68. Construct validity of the scale was evaluated by the relationship between child and parent measures basing on Social Learning Theory proposed by Bandura claiming that children's attitudes are related to their direct experiences and observations of others. Correlation results are as follows: $r(21) = .76$, $p < .0001$, for the mothers, and $r(20) = .60$, $p < .01$, for the fathers. As a result, satisfying high evidence for construct validity, parents' attitudes were reported to be highly correlated with children's (Musser & Diamond, 1999).

Within the adaptation process, the CATES- PV was translated into Turkish. Furthermore, based on the suggestion of orginal authors of the CATES- PV, in order to explain items to preschool children easily, a picture format which explicitly defines each item was developed by researcher and pictures were drawn by an artist. Pictures were reviewed as well as necessary modifications were done by two early childhood educators and one environmental educator. The interview protocol consisted of 15 main interview questions and related sub-questions. Five experts reviewed the items and pictures; three of the experts were early childhood educator, one was an environmental education educator and one was an English language educator. After the experts' views were consulted, necessary modifications were made accordingly under the supervision of an early childhood educator.

After the modifications were done, a pilot study was conducted with 10 preschool children to check comprehensibility of the interview questions and pictures. Participants of pilot study were

selected among five and six year's old children attending to public preschools. Four of children were female and six of them were male. Pilot interviews were conducted in participant's schools in Çankaya district of Ankara. One to one interviews were audio-taped and transcribed by the researcher and the pilot data were analyzed in order to outline dimensions, sub-dimensions and initial codes. As a result, orders of some questions were changed then dimensions and sub- dimensions were determined.

3.3.2 Interview Protocol and Interview Questions

The researcher's position plays important role in quality of a qualitative research (Golfshani, 2003). In the context of this study, the researcher, herself prepared the interview protocol. The interview protocol and pictures were prepared in line with the questions in CATES- PV and preschool children's developmental appropriateness was taken into consideration. Sub questions were added to the scale under the supervision of an early childhood education specialist and an environmental education expert. It was planned to make an in depth investigation of preschool children's environmental attitudes while adding sub- questions. Through interview questions it was aimed to explore preschool children's attitudes toward environmental issues in terms of consumption patterns, environmental protection, reusing and recycling, and living habits as well as the reasons the defined attitudes towards environmental issues. Interview questions and related dimensions were presented in Appendices[A] and Appendices[B].The

corresponding sketch of questions was presented below (Figure 1).

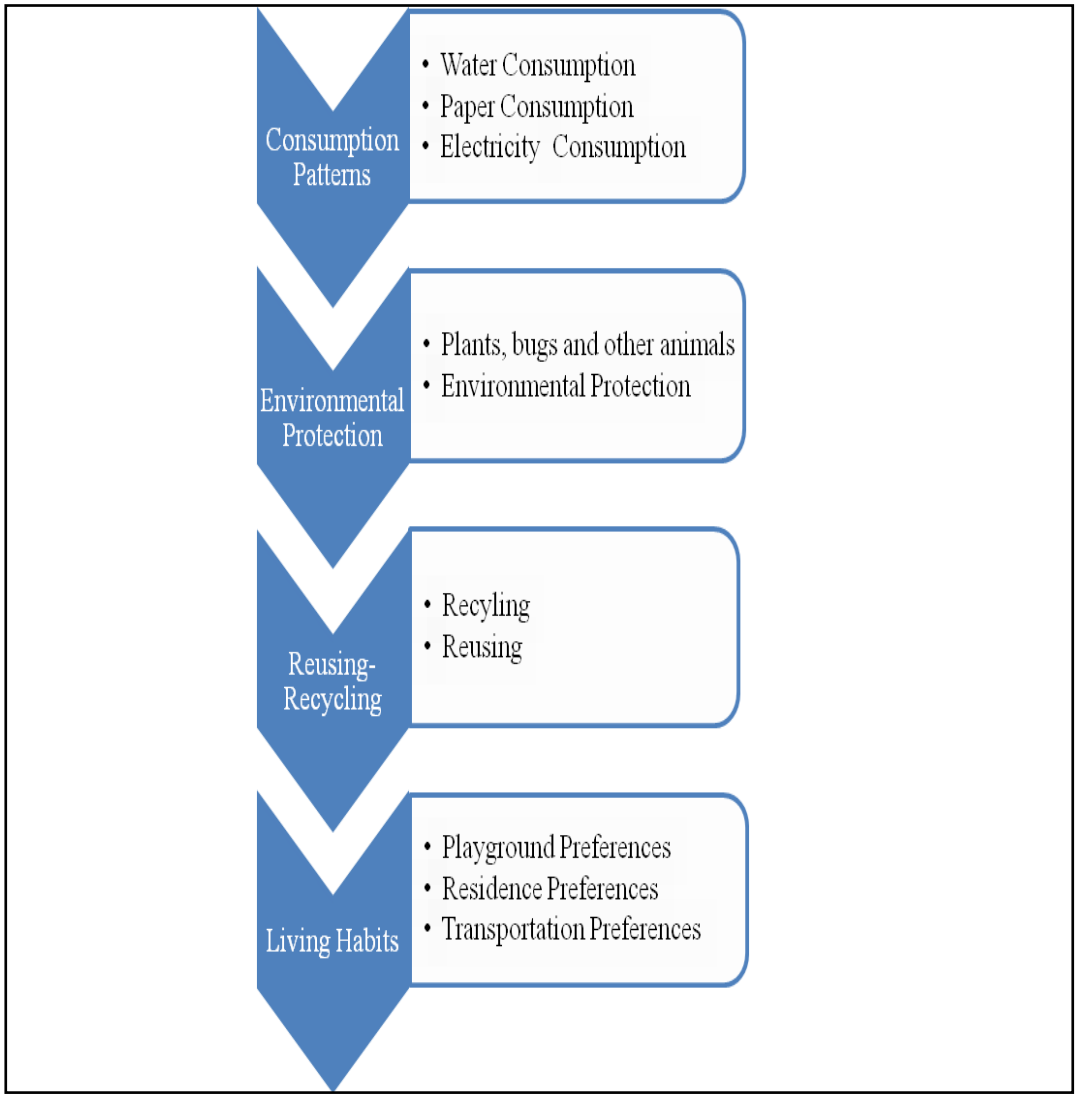

Figure 1 The corresponding sketch of questions

3.3.3 Data collection procedure

Data collection procedure was realized by researcher and monitored by the early childhood specialist. Before data

collection was initiated in the first semester of the academic year of 2009-2010, official permission was obtained from Ethical Commission in Middle East Technical University and Ministry of National Education. Data collection process occurred between November 2009 and January 2010. Schools were chosen based on their convenience to researcher. Before the interviews, researcher visited the schools, introduced herself and gave information about the interview protocol. First, school administrations were informed about the purpose of the study. Then, teachers were informed about the purpose of the study and their cooperation was requested in order to supervise the children. Children were oriented by the teachers to answer questions carefully. Interviews were conducted in a room addressed by school administrations. In the rooms, there was nobody else other than the students and the researcher and no interruptions were occurred during interviews. Before interviews, participants were informed about the interview process. Interview questions were asked in the same order and participants were told express their ideas looking at the pictures shown. Children were encouraged to answer questions about environmental issues in detail; hence, they were given time to think about their responses. Each interview took approximately 30 minutes and interviews were audio-recorded and audio-typed verbatim. Demographic information about children was obtained from the teachers. Each child was interviewed individually by face to face interview method. During the interviews, children are told that they could give up or took a break off if they got bored. In addition, researcher sometimes repeated the questions

in order to ensure that children were understood fully and correctly.

3.4 Data Analysis

The data obtained from the one to one interviews were audio-taped and then each interview record was transcribed by the researcher one by one. As the first step, the transcribed data were read several times and reviewed in order to make sure about the clarity and completeness. Then repeated codes in data source were noted. Literature was overviewed to find out similar or different codes. In the literature, ecocentric and anthropocentric drives were reported to explain underlying reason of environmental attitudes. As an initial step for the data analyses, data were coded whether responses were ecocentric or anthropocentric. The lists of codes were constructed for the responses of each participant for each interview question. Additionally, several examples for each code were recorded. After the codes were assigned, the data set revised and coded once more for each pattern. Finally, numbers of children's attitudes were coded as ecocentric or anthropocentric for each question and sub- question.

Consultancy was obtained from a qualitative research specialist prior to setting codes, and indeed, many qualitative research books and articles were reviewed (Creswell, 2007; Meriam, 2009; Patton, 2002)

Data analysis process was conducted by two independent coders as Creswell offered (2007). First coder was the researcher and the second coder was a doctoral candidate in the early childhood

education program of elementary education department in Middle East Technical University. In addition, second coder have been attending a course about sustainable development offered by Elemantary Education Department of METU. Both coders analyzed the transcribed interview in order to increase inter-rater- reliability. Except for 4 statements, coders reached full agreement on codes (1/1). Finally, the codes were revised by an environmental education expert and early childhood specialist.

CHAPTER IV

FINDINGS

This chapter of the study was comprised of the results obtained from the interviews realized with forty preschool children related to their attitudes on environmental issues. Preschool children's attitudes toward environmental issues were described under four dimensions as; consumption patterns, environmental protection, reusing- recycling, and living habits. Preschool children's attitudes toward environmental issues were categorized depending on the framework sketched by Thompson and Barton (1994) for all dimensions, and attitudes were distinguished as ecocentric or anthropocentric.

Along with one of the research questions of the study, gender was considered as the factor to differentiate environmental attitudes of the children of this study. Accordingly, sample answers of the preschool children were presented below for each dimension and sub dimension for females and males. Hence, the letters "F" and "M" were used to represent the quotes of females and males respectively, in the following sections.

4.1 Consumption Patterns

The first dimension was defined as "Consumption Patterns" and the sub dimensions were water, paper and electricity consumption. Consumption patterns of the students were evaluated according to the answers given for questions asked under this issue.

4.1.1 Water Consumption

Although most of the preschool children (38 out of 40) reported that they turn the water off when they brush their teeth (Table 4), 27 of them (out of 38) explained the reason "why they turn the water off" within the framework of an anthropocentric point of view (Table 5).

Table 4: Preschool children's attitudes towards water consumption regarding turning the water off when brushing teeth

Consumption Patterns		
Water consumption pattern	Turning the water off when brushing teeth	
Gender	Answers	
	Yes	No
Female	18	2
Male	20	0
Total	38	2

Table 5: Preschool children's attitudes towards water consumption regarding the reason of turning the water off when brushing teeth

Consumption Patterns		
Water consumption pattern	The reason why turn the water off when brushing teeth	
Gender	Attitude	
	Ecocentric	Anthropocentric
Female	5	15
Male	6	12
Total	11	27

Examples of preschool children's anthropocentric attitudes towards the reason of water consumption were reflected as following:

> If we do not turn the water off while brushing teeth, we waste water and we have to pay much more money for the water bill. (M 1)
>
> I turn the water off when I brush my teeth because my mother gets angry and shout close the water! (M 7)
>
> If we leave the water on while brushing our teeth, water finishes and we cannot buy it again, since we do not have money to buy water anymore. (M 17)
>
> I close the water while brushing my teeth, because if I do not close the water off, water spills over, and ground gets dirty. (F 1)
>
> I turn the water on just when I need water; if not, we waste much money and my mother will not be able to buy my school materials for the reason that we do not have money. (F 18)
>
> I close water while brushing my teeth in order to save water. If we do not save water, we waste much money and we can get famish. (F 2)

On the other hand, 11 preschool children, out of 38, answered the question within the framework of an ecocentric point of view. The following comments reflected preschool children's ecocentric point of view on why they turn the water off while brushing their teeth.

> Because consuming much water corrupts stability of nature. I do not want to destroy nature. If we consume water unconsciously, we may destroy our world, and in time water scarcity increase. After, global warming results and all animals are killed; in addition, because of global warming, we will not be able to eat fresh fruits anymore. (F 8)

> Since I do not want to waste water, I always turn the water off when I brush my teeth. We should be careful while using water, we should not waste water. (F 4)

> I always turn the water off when I brush my teeth. I do not waste much water. I just use it while wetting my toothbrush and washing my mouth. If we do not use water carefully, we waste it, it is already scarce. (M 18)

> I always turn the water off in order not to waste and not to run out water. (M 1)

Moreover, preschool children's responses for the question "What happens if water gets scarce" indicated that while only 2 (out of 36) preschool children explained the question from the ecocentric point of view, 34 preschool children's' environmental attitudes were evaluated as anthropocentric as far as water consumption is considered (Table 6).

Table 6: Preschool children's attitudes towards water consumption regarding the result of water scarcity

Consumption Patterns			
Water consumption pattern	The result of water scarcity		
Gender	Attitude		
	Ecocentric	Anthropocentric	I don't know
Female	2	16	1
Male	0	18	3
Total	2	34	4

Preschool children's ecocentric attitudes towards water consumption regarding the result of water scarcity were exemplifed following:

> If water diminishes in the world, it does not rain anymore; and this situation corrupts stability of nature. (M 5)

> If water decreases in the world, trees and flowers will not be able to grow up, if they do not grow up, oxygen will disappear. (F 4)

Particularly, 21 preschool children among 34 mentioned the disadvantages of water scarcity referring anthropocentric environmental attitudes.

> If water decreases, we cannot swim. (M 9)

> If water decreases, my mother cannot wash dishes and clean home. (M 13)

> We cannot wash our hands and brush teethes, if water gets scarce. We get ill easily because we cannot wash our hands. (F 9)

> If water gets scarce, we cannot brush teethes, and so people call us dirty girl. (F 19)

Furthermore, the answers of 6 preschool children (out of 40) for the question "What is the source of water" was, dam (n=3), sea (n=2), and river (n=1). Moreover, 13 preschool children did not give an answer for this question and 21 of them gave unrelated answers like grape, tree, etc. Moreover, preschool children's responses for this question did not differ in terms of gender (Table 7).

Table 7: Preschool children's attitudes towards water consumption regarding source of the water

Consumption Patterns					
Water consumption pattern	Source of the water				
Gender	Attitude				
	Dam	Sea	River	Don't know	Unrelated
Female	2	1	-	5	9
Male	1	1	1	8	12
Total	3	2	1	13	21

4.1.2 Paper Consumption

As a result of the questions related to paper consumption, 16 of 40 preschool children stated that they use both sides of paper when they draw or write (Table 8).

Table 8: Preschool children's attitudes towards paper consumption regarding to use both sides of paper

Consumption Patterns		
Paper consumption pattern	Using both sides of paper when draw or write	
Gender	Answers	
	Yes	No
Female	6	11
Male	10	13
Total	16	24

On the other hand, among them only 3 preschool children valued ecocentric point of view for the reason of using the both sides of the paper (Table 9).

Table 9: Preschool children's attitudes towards paper consumption regarding the reason of using both sides of paper

Consumption Patterns		
Paper consumption pattern	The reason why use both sides of paper when draw or write	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	2	7
Male	1	6
Total	3	13

Preschool children's ecocentric attitudes towards paper consumption regarding the reasons of paper consumption were presented below:

> I always use both sides of paper when I draw picture, because paper is made by trees and if we use more than enough paper, more trees are cut day by day. (F5)

> In order to make paper, trees are cut; indeed, I do not favor cutting so many trees because animals cannot feed. For example, giraffe eats leaf of trees, birds live in trees; therefore, use both sides of paper when I draw or write. (M 5)

Conversely, twenty four preschool children displayed anthropocentric view point while explaining the reason why they do not use both sides of paper and 11 of them stated that

drawing both side of paper make the picture bad - looking as reflected in the examples below:

> I do not like using back side of paper while drawing since I want to draw well- imaged pictures and drawing back side make my picture awful. (F 10)

> I use only one side of paper while drawing because if I draw both sides of paper, I cannot present it. (M 11)

Furthermore, less than a quarter of the total number of preschool children (6 out of 40) revealed ecocentric point of view for excessive paper use (Table 10).

Table 10: Preschool children's attitudes towards paper consumption regarding results of wasting much paper

Consumption Patterns			
Paper consumption pattern	Results of wasting much paper		
Gender	Attitude		
	Ecocentric	Anthropocentric	I don't know
Female	4	11	3
Male	2	14	6
Total	6	25	9

Quaotation of preschool children's ecocentric attitudes towards paper consumption regarding results of wasting much paper were exampled below:

> If we use more than enough paper, we lose trees. Then no fruit, no vegetable grow up. (F 11)

> If we use less paper, we give a chance to trees live more. (F 1)

> Excessive use of paper harms to our nature. People cut many trees in order to make paper and so trees and birds cannot live. Moreover, we cannot take breath, we get lack of oxygen. (M 2)

> Using much paper causes to eradicate trees. (M 1)

Answers for the question "what is paper made by" showed that 12 preschool children, out of 40, knew the source of paper as trees. Fourteen preschool children, on the other hand, mentioned that they did not know the answer and other 14 gave unrelated answers (Table 11).

Table 11: Preschool children's attitudes towards paper consumption regarding the source of paper

Consumption Patterns			
Paper consumption pattern	Source of paper		
Gender	Attitudes		
	Trees	Unrelated	I do not know
Female	7	5	10
Male	5	9	4
Total	12	14	14

4.1.3 Electricity Consumption

The final sub-dimension of consumption patterns is about electricity use. Almost all of preschool children (39 out of 40) stated that they turn the light of when they leave room (Table 12).

Table 12: Preschool children's attitudes toward electricity consumption regarding to turn the lights off

Consumption Patterns		
Electricity consumption pattern	Turning the lights off when leaving room	
Gender	Answers	
	Yes	No
Female	22	0
Male	17	1
Total	39	1

On the other hand, when preschool children were asked why they turned the lights off, most of them (33 out of 39) expressed the reason through anthropocentric point of view (Table 13).

Table 13: Preschool children's attitudes toward electricity consumption regarding the reason of turning the lights off

Consumption Patterns		
Electricity consumption pattern	The reason why turn the lights off when leaving room	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	3	15
Male	3	18
Total	6	33

Antrophocentric attitudes of preschool children's towards electricity consumption regarding turning the lights off were presented below:

> I turn the lights off while leaving my room, if I do not forget, because using more electricity causes wasting more money. If we do not turn the lights off we have to pay much money for electric bill. (F 16)

> I always turn the lights off, if not, lamp explodes and our home can burn (F 21)

> I always turn the lights off since I do not want to run out of electricity. Leaving lights on consumes electricity, electricity may be run out and may not be supplied back. (M 8)

> If we do not turn the lights off, we give damage to lamps. Lamps usually explode and our family needs to change it. (M 14)

Furthermore, 6 (out of 39) preschool children mentioned careful use of electricity through ecocentric point of view, as presented below.

> I always leave the lights off while leaving room in order not to consume energy. If we waste more electricity we consume energy that pollutes our environment. (M 5)

> I do not want to consume much electric, I do not want to waste it not damage our world. (F 9)

Similar with the answers above, no more than 5 preschool children (out of 40) mentioned the relationship between electricity consumption and natural corruption when they were asked what happens to nature if we waste much electricity (Table 14).

Table 14: Preschool children's attitudes toward electricity consumption regarding the result of wasting much electricity

Consumption Patterns			
Electricity consumption pattern	The result of wasting much electricity		
Gender	Attitude		
	Ecocentric	Anthropocentric	I do not know
Female	3	11	9
Male	2	9	6
Total	5	20	15

Example answers of preschool children's ecocentric attitudes towards results of wasting electricity were presented below:

> Electricity emits radiation and radiation is harmful for animals, plants and people. (M 9)

> If we consume much electricity, we damage trees and birds. In order to produce electricity, people need to cut trees and if people cut trees, birds lose their homes. (F 8)

In summary, the answers for the "Consumption Patterns" dimension indicated that, most of the 5-6 years old preschool children of this study had ecocentric attitudes at a first glance. However, when they were asked about the reasons for doing/thinking so, their answers were evaluated mainly as anthropocentric as reflected below:

> R: Some kids like to leave the water running when they brush their teeth but other kids always turn the water off. Choose which of the two groups of children you are like?
> M3: I always turn the water off if I do not use water while brushing teethes.
> R: Why do you turn the water off?

M3: Because if we waste water, one day water finishes and do not come back. Dishes get dirty, glasses get dirty… Mothers can not wash them.
R: Water do not finish, do not worry! However, It may decrease. Then tell me, what happens if water decreases?
M3: If water decreases, we can wait until it increases to clean home.
R: What is source of water? From where does it come to house/ school?
M3: We have not learned it yet; I do not know so.
R: Some kids use both sides of the paper when they draw or write but other kids use only sides of the paper when they draw or write. Choose which of the two groups of children you are like?
F21: Firstly I draw this side, then I turn the paper down and draw other side.
R: Why do you use both sides of paper?
F21: If I do not use both sides of paper, my paper finishes, I cannot draw pictures.
R: What is the paper made of?
F21: I do not know.
R: What happens if we waste much paper?
F21: Wasting much paper is a very bad thing because if paper finishes, we cannot find any paper to draw a picture.
R: Some kids leave the lights on when they leave the room but other kids turn the lights off when they leave a room. Choose which of the two groups of children you are like?
F12: I always turn the electricity off when leaving room.
R: Why do you leave the lights off when you leave the room?
F12: In order to save our home against burglars. I do not want that burglars come in to my room.
R: What happens if we waste much electricity?
F12: Nothing, burglars do not come into our home.

In addition, a summary sketch of preschool children's attitudes towards consumption patterns was presented in Figure 2:

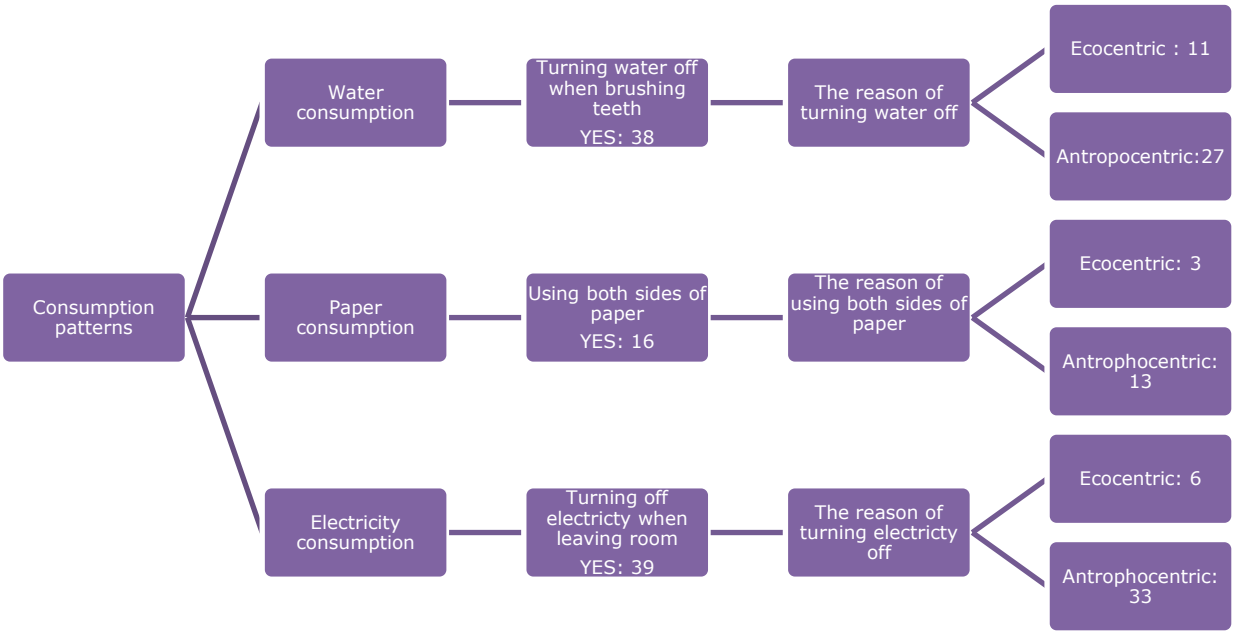

Figure 2 Summary of preschool children's attitudes- Consumption patterns

Above and beyond, the answers of preschool children indicated that gender did not seem to have an effect on their attitudes towards consumption patterns. Both girls and boys gave ecocentric answers at first glance whereas their answers to the "why" questions were anthropocentric. Similarly, any differences were observed in sub- dimensions between girls and boys.

4.2 Environmental Protection

The second dimension was defined as "Environmental Protection" and sub dimensions were plants and bugs and other animals, and environmental pollution. There were 6 questions related to plants and bugs and other animals, and environmental pollution

respectively. The answers of the preschool children, considering gender differences, were presented in the following sections.

4.2.1 Plants and bugs and other animals

Plants and bugs

Most of the preschool children (33 out of 40) reported that they never bring plants and bugs they find outside to their homes (Table 15).

Table 15 Preschool children's attitudes towards plants and bugs regarding to bring plants and bugs to home

Environmental protection		
Plants and bugs	Bringing plants and bugs to home	
Gender	Answers	
	Yes	No
Female	2	18
Male	5	15
Total	7	33

However, thirteen of them (out of 33) explained the reason why they did not bring them home within the framework of ecocentric point of view (Table 16).

Table 16: Preschool children's attitudes towards plants and bugs regarding the reason of not bringing plants and bugs home

Environmental protection		
Plants and bugs	The reason why not bringing plants and bugs home	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	8	11
Male	5	9
Total	13	20

Examples of children's responses reflecting their anthropocentric attitudes towards plants and bugs regarding the reason why they did not bring them home were presented below:

> I do not want to make them afraid of me. (F 2)

> I do not bring them home. If I bring them home they discolor and die. (F 1)

> I just look at them; I do not bring them home because they have a natural life. It is not true to take them out of nature; that is not to alter their natural life. (F 5)

> I do not want to kill them, if I bring them home, they cannot live, they miss their home and they die. (M 9)

> I do not bring plants and bugs home since in the world plants and bugs scarce in the course of the time. (M 16)

> I have a friend and she brings ladybirds home. I do not bring not to kill them. (M 2)

In contrast, 20 children (out of 33) valued anthropocentric attitudes towards bugs and plant while explaining the underlying

reason of not to bringing them home. Examples of preschool children's quotas were represented below.

> I do not bring them home because I am afraid of plants and bugs very much. (M 13)

> They may bite and hurt me; therefore, I do not bring them home. They may dirty home. (M 3)

> If we bring them home, they may poison us. I think bringing plants and bugs home is harmful for people." (M 19)

> I only like to look at them; I do not touch them because sometimes they may smell bad. Moreover, if I bring them home, they can enter my room and litter it up. (F 13)

> They may bite and hurt me; therefore, I do not bring them home. They may dirty home. (F 18)

> I cannot bring them home because my mother gets angry very much. (F 6)

Preschool children's responses for the question "What happens if we bring plants and bugs home?" revealed their ecocentric attitudes. Most of the preschool children (27 out of 40) declared that bringing plants and bugs may destroy their natural life (Table 17).

Table 17: Preschool children's attitudes towards plants and bugs regarding the result of bringing plants and bugs home

Environmental protection		
Plants and bugs	The result of bringing plants and bugs home	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	14	9
Male	13	4
Total	27	13

Citations of preschool children's responses revealing their anthropocentric attitudes towards plants and bugs regarding the results for bringing them home was as below:

> If we bring them home, we hurt them. They cannot live at home. (M 9)

> If we bring them home, we cause their death. They cannot find food, they get bored and they miss their home. (M 3)

> If we bring them home, they miss their family, cry and get ill. (F 20)

> If we bring them home, they get unhappy and die at the end, because they cannot breathe. (F 15)

Preschool children's answers about home of plants and bugs indicated that some of them have thoughts about their habitat. Their responses for the home for plants and bugs were as follows: Grass (n=7), garden (n= 5), tree (n= 5), soil (n=3), forest (n= 2), weather (n= 1). On the other hand, 13 preschool children declared that they did not have an idea about the issue (Table 18).

Table 18: Preschool children's attitudes towards plants and bugs regarding where plants and bugs live

Environmental protection						
Plants and bugs	Where do plants and bugs live?					
Gender	Answers					
	Grass	Garden	Tree	Chunk	Weather	I do not know
Female	3	2	4	1	2	8
Male	4	3	1	2	0	10
Total	7	5	5	3	2	18

Other Animals

Preschool children's attitudes towards animals were evaluated through 4 questions under the environmental protection dimension.

As an initial step preschool children were asked whether they like to feed the birds or not. Many children (21 out of 40) explained that they like feeding birds (Table 19).

Table 19: Preschool children's attitudes towards other animals regarding to like feeding birds

Environmental protection		
Other animals	Liking to feed birds.	
Gender	Answers	
	Yes	No
Female	10	10
Male	11	9
Total	21	19

In a similar way, most of them (14 out of 21) explained the reason why they like feeding birds towards ecocentric point of view (Table 20).

Table 20: Preschool children's attitudes towards other animals regarding the reason of feeding birds

Environmental Protection		
Other animals	The reason of feeding birds.	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	7	2
Male	7	5
Total	14	7

Quotations from children's comments were reflected below:

> I like feeding birds because if we do not feed them they get hungry. (M 6)
>
> I love birds very much, they are very sweet, they are very beautiful; therefore I always feed them. (M 1)
>
> Birds are our friends. I think we should help them find food by feeding. (F 21)
>
> I had a bird, her name was –Cik Cik-. She died; I got very sad and cried. I used to feed her every day. I think birds can need us to survive. (F 13)

Rest of preschool children (19 out of 40) declared that they did not like feeding birds. They mentioned that they are afraid of birds and according to them birds can be harmful to people.

Several of the answers reflecting preschool children's anthropocentric attitudes were presented below:

> I do not like birds, so I do not feed them. They can defecate to my hand. (F10)

> I do not like feeding birds. Once I tried to give bread the pigeons in our balcony but they flew in the direction of me and made me feared. (M 3)

The second question in order to evaluate preschool children's attitudes toward animals was about the importance of the animals; they were asked if they think animals are important or not? Most of the preschool children (33 out of 40) stated that animals were important (Table 21).

Table 21: Preschool children's attitudes towards other animals regarding to think that animals are important

Environmental protection		
Other animals	Thinking that animals are important	
Gender	Answers	
	Yes	No
Female	18	2
Male	15	5
Total	33	7

Sixteen children (out of 33), on the other hand, answered the question "why do they think animals are important", within the framework of an ecocentric point of view (Table 22).

Table 22: Preschool children's attitudes towards other animals regarding the reason why animals are important

Environmental protection		
Other animals	The reason why animals are important	
Gender	Attitude	
	Ecocentric	Anthropocentric
Female	10	8
Male	6	9
Total	16	17

Preschool children's ecocentric attitudes towards other animals regarding the reason why animals are important were illustrated below through their responses.

> I believe in that animals are very important because some of them are endangered. My mother had read me a story. There was a skylark, he left waterless and closed his eyes. Children thought that he died and they laid him to rest. There are many animals like skylarks which cannot find water and food. They die (F 1).

> Animals are important since they deserve to be important. (F 2)

> Animals are important for saving natural life.(M 19)

> I think animals are very beautiful. I love them very much; therefore, I think they are beautiful. (M 3)

Conversely, 17 preschool children addressed use of animals by people's needs. Their anthropocentric comments reflected below:

> I think animals are very important. My grandmother has fish and she feeds them every morning. She loves them very much. Animals are sold, to make people happy. My grandmother is very happy with her fish. (M 10)

> I think animals are very important because they rescue us if burglars come our home. (M 5)

> I think only the animals that can carry goods are important. For example, horse and donkey. They are very useful to travel very quickly (F 5)

> Chickens are very important because they supply us with eggs; cows are very important because they give milk; but lions are not important they are dangerous. (F 19)

Then preschool children were asked whether they disturb or catch animals they find outside or not. Thirty two (out of 40) preschool children reported that they do not disturb or catch animals they find outside (Table 23).

Table 23: Preschool children's attitudes towards others animals regarding to catch or disturb animals in outside

Environmental protection		
Other animals	Catching or disturbing animals in outside	
Gender	Answer	
	Yes	No
Female	3	15
Male	5	17
Total	8	32

Similar to the above results, their rationale for not disturbing or catching animals can be explained by ecocentric point of view. More than half of the preschool children of this study (25 out of 40) mentioned that they do not want to hurt animals; therefore, they do not disturb or catch them (Table 24).

Table 24: Preschool children's attitudes towards others animals regarding the reason why not catching or disturbing animals find outside

Environmental Protection		
Other animals	The reason why not catching or disturbing animals find outside	
Gender	Attitude	
	Ecocentric	Anthropocentric
Female	10	3
Male	15	4
Total	25	7

Examples of preschool children's comments presenting their ecocentric attitudes regarding the reason of not catching or disturbing animals that they find outside were reflected below:

> I do not try to catch and disturb animals. I believe that they have right to wander in streets freely. If we catch them they get unhappy and may die. (M 13)

> I do not want to hurt them; therefore, I do not try to catch them and I do not disturb them. (M 9)

> If we try to catch them, they may die. (M 5)

> If we disturb them, they worried to be killed; it is very disturbing for them. I do not want to make them unhappy. (F 13)

> In order not to annoy them, I do not try to catch them. (F 21)

> Animals like living freely; we cannot interrupt their daily life. (F 2)

In addition, preschool children's attitudes towards wild animals were investigated under the dimension of environmental protection. Most of the preschool children (34 out of 40) believed that wild animals should be protected (Table 25).

Table 25: Preschool children's attitudes towards other animals regarding to protect wild animals

Environmental protection		
Other animals	Protecting wild animals	
Gender	Answer	
	Yes	No
Female	20	3
Male	14	3
Total	34	6

Thirty children's (out of 34) responses for the question "Why do you think that wild animals should be protected?" indicated that they had ecocentric attitudes toward wild animals (Table 26).

Table 26: Preschool children's attitudes towards others animals regarding the reason why wild animals should be protected

Environmental protection		
Other animals	The reason why wild animals should be protected	
Gender	Attitude	
	Ecocentric	Anthropocentric
Female	23	1
Male	17	3
Total	30	4

Ecocentric attitudes of preschool children's towards wild animals were presented through examples of their responses as below:

> I believe in that wild animals in the wild forest should not be killed. Because as people, they have right to live and everybody should protect them. (F 16)

> I love all animals very much and I do not want them killed; they are endangered. If animals in the wild nature are killed, they may be extinct and may not be able to see their children in future. (F 5)

> Wild animals are dangerous; however, we should not kill them. I believe in that they should live, they have right to live. Indeed, sometimes, they can be sweet. They are very innocent. If we kill them they cannot see their children in future. (M 8)

> They have right to live, no one can kill them. (M 16)

In addition, preschool children were asked why some people kill wild animals and examples of their responses were reflected below:

> Wild animals can hurt people and so people may kill them in order to live. (M 6)

> They frustrate people; therefore, people may kill them. (M 3)

> People kill animals in order to eat them. (F 18)

> People kill animals in order to make fur and dress. (F1)

4.2.2 Environmental Pollution

Under environmental protection dimension preschool children finally were asked whether they take garbage from the ground and throw them to rubbish bin or they do not take bins from the ground. Answers of 23 of them (out of 40) indicated that

preschool children pick up garbage from ground when they see (Table 27).

Table 27: Preschool children's attitudes towards environmental pollution regarding to take responsibility for the garbage around

Environmental protection		
Environmental pollution	Taking responsibility for the garbage around	
Gender	Attitude	
	Yes	No
Female	12	10
Male	11	7
Total	23	17

Moreover, 11 of them (out of 23) valued ecocentric attitudes that they do not want to give harm to environment therefore they try to pick up garbage from ground (Table 28).

Table 28: Preschool children's attitudes towards environmental pollution regarding the reason of feeling responsible for the garbage around

Environmental protection		
Environmental pollution	The reason for feeling responsible for the garbage around	
Gender	Attitude	
	Ecocentric	Anthropocentric
Female	5	6
Male	6	6
Total	11	12

Examples of preschool children's responses revealing their ecocentric attitudes were reflected below:

> I am very careful about garbage on the streets because these kinds of garbage make our street dirty; then the world gets dirty. Garbage produce bad smelling gases and these gases are harmful for our world. (F 20)

> In order make our environment clean when I see garbage on the floor, I always take and throw it in a rubbish bin and I get angry the children who do not throw them into rubbish bin. (F 15)

> I want to make our nature clean; therefore, for example, if I see a waste of banana, I take it from ground and throw it in a rubbish bin. (M 17)

> I do not want to give harm to our environment. (M 2)

Then preschool children were asked that what happens if we do not take them from ground and we do not throw them to rubbish bin. Fourteen of (out of 40) them answered the question valuing ecocentric attitudes (Table 29).

Table 29: Preschool children's attitudes towards environmental pollution regarding the result for feeling responsible for the garbage around

Environmental protection		
Environmental pollution	The result for feeling responsible for the garbage around	
Gender	Attitude	
	Ecocentric	Anthropocentric
Female	8	17
Male	6	9
Total	14	26

Ecocentric attitudes of preschool children's towards environmental pollution regarding the result for feeling responsible for the garbage around were presented below through examples of their answers.

> If we do not help garbage men to clean streets, a black hole gets bigger and bigger in the world because of environmental pollution. (F 11)

> Our world gets full of garbage and it smells very bad. We won't have such a beautiful world anymore. (F 3)

> If we do not take them from streets and throw it into a rubbish bin, we give harm to our world. (M 2)

> I think we should clean garbage from stress for a healthy world. (M 12)

On the other hand 26 preschool children (out of 40) responded this question valuing benefits of human as reflected below:

> If we do not take all these garbage from the ground, someone may fall off by skiing. (F 6)

> If we do not pick up garbage, garbage men have to work more. (F 3)

> Policemen and garbage men gets angry if we do not pick up garbage from the ground. (M 6)

> If we do not clean street, someone; for example, a garbage man comes and cleans the street. (M 5)

Preschool children's attitudes towards environmental protection indicated that most of them valued plants and animals by an ecocentric point of view as reflected above. However, after an in depth inquiry, it was concluded that preschool children of this study had anthropocentric reasons for importance of animals and environmental pollution. Preschool children's attitudes towards importance of animals indicated their anthropocentric reasoning as reflected below:

> R: Some kids think that animals are important but other kids think that animals are not important. Choose which of the two groups of children you are like?
> F8: I think animals are very important.
> R: Why do you think animals are important?
> F8: Because they make world funny. They provide us many opportunities. For example; if cows are not we cannot drink milk; if chickens are not, we cannot eat cordon blue.

Similarly, preschool children attitudes towards environmental pollution revealed that children of this study did not feel responsible for the garbage around. Examples of preschool children's quotas were reflected below:

> R: Some kids take garbage from the ground and throw them to rubbish bin but other kids do not take bins from the ground. Choose which of the two groups of children you are like?
> M4: I take garbage from the ground in our garden and throw it to rubbish bin in the street.
> R: Why do you take them from ground and throw it to rubbish bin?

M4: If I do not throw garbage to rubbish bin, policemen get angry to me and they can confine me.
R: What happens if we do not take them from ground and throw it to rubbish bin?
M4: God gets angry to me and God chasten me then.

A brief summary of preschool children' attitudes towards environmental protection were presented below by the Figure 3.

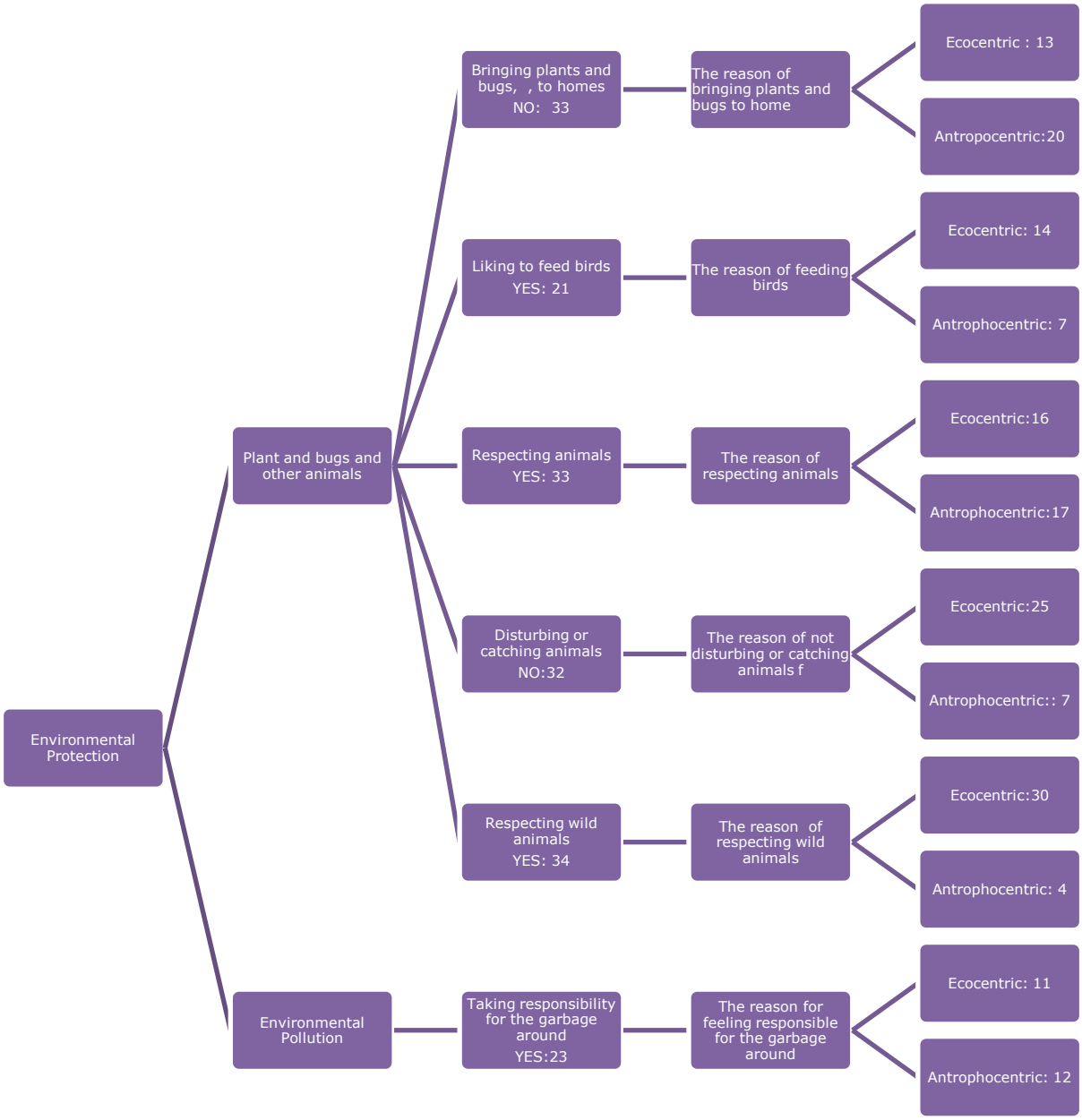

Figure 3 Summary of preschool children' attitudes- Environmental Protection

Besides, the quotes of children indicated that their attitudes towards environmental protection did not differ in terms of gender. Both girls and boys gave ecocentric answers at first glance whereas their answers to the "why" questions were anthropocentric. Similarly, any differences were observed in sub-dimensions between girls and boys.

4.3 Reusing and Recycling

The third dimension was defined as "Reusing and Recycling" and children were asked three questions to grasp their attitudes. The answers of the children, considering gender differences, were presented in the following sections.

4.3.1 Recycling

As an initial step preschool children's awareness about recycling was examined and they were asked to define recycling. Thirty two participants did not have any idea about recycling while only eight preschool children (out of 40) defined recycling (Table 30).

Table 30: Preschool children's attitudes towards recycling regarding the meaning of recyling

Recycling-Reusing		
Recycling	What is recycling?	
Gender	Answers	
	Can define	Cannot define
Female	3	17
Male	5	15
Total	8	32

Preschool children's recycling definitions were exampled below:

> Recycling means to recycle papers. Recycle bin is a kind of bin that recycles paper. (F 14)

> Recycle helps trees to be alive. I saw it on TV, papers recycled for trees. (F 2)

> Recycle bin is the bin that we throw paper in. Old papers are recycled for making new papers. (F 21)

> Recycling is the place that bottles and cans are thrown away. (F 11)

> There is a recycle bin in front of our classroom. Recyclable bins are brought by dustcarts to recycling centers. In these centers some recyclable materials such as papers, milk bottles and coke cans are able to be processed and new papers, bottles and cans can be produced. (M 5)

> Recycle is the place that we throw batteries in. (M 18)

> We throw plastics, papers, bottles and cans in to recycle bin. Therefore we save nature. (M 2)

> I saw some boxes in the market; in these boxes we bring batteries in order not to destroy environment. (M 17)

Eight preschool children who had idea about what is recycling were also asked whether they throw recyclable bins to recycle bin or they throw things away when they're done with them. Two of eight participants explained that they threw recyclable bins to recycle bin. in order to make them recycled, valuing ecocentric point of view (Table 31 & Table 32).

Table 31: Preschool children's attitudes towards recycling regarding to use recyclable bins

Recycling-Reusing		
Recycling	Throwing recyclable bins to recycle bin	
Gender	Answers	
	Yes	No
Female	1	4
Male	1	2
Total (out of 8 children who can define recycling)	2	6

Table 31: Preschool children's attitudes towards recycling regarding the reason of using recycle bin

Recycling-Reusing		
Recycling	The reason why throwing recyclable bins to recycle bin	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	1	3
Male	1	4
Total (out of 8 children who can define recycling)	2	6

Preschool children's responses regarding their ecocentric attitudes towards recycling were reflected below:

> I had told you that recycle bin recycle old papers, glasses, plastics and cans and therefore we save nature. (M 2)

> I do not want to give harm to environment, therefore, we always collect recyclable things at home and my father throw them in recycle bin. (F 11)

On the other hand, six preschool children explained that they did not have easy access to recycle bin; therefore, they threw all wastes into rubbish bin. For example:

> We do not have a recycle bin at home; therefore, I throw all recyclable bins into rubbish bin. (F 14)

> We throw all the garbage into the same rubbish bin because we do not have such a bin at home. (M 12)

Thirty- two preschool children (out of 40) were not asked whether they throw recyclable material to recycle bin or not; on the other hand a total of forty preschool children were asked to sort their bottles/ can and recycle them.

Under this sub-dimension preschool children were also asked if they sort their bottles/ cans and recycle them. Thirteen of them (out of 40) reported that they sort their bottles/ cans and recycle them (Table 33).

Table 32: Preschool children's attitudes towards recycling regarding to sort bottles/ cans and recycle

Recycling-Reusing		
Recycling	Sorting bottles/ cans and recycle	
Gender	Answers	
	Yes	No
Female	6	12
Male	7	15
Total (for all children of the study)	13	27

On the other hand only five (out of 13) of them explained the reason why they do so from the point of ecocentric framework (Table 34).

Table 33 : Preschool children's attitudes towards recycling regarding of the reason why sorting bottles/ cans and recycle

Recycling- Reusing		
Recycling	The reason why sorting your bottles/ cans and recycle	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	3	5
Male	2	3
Total	5	8

Examples of preschool children's quotas presenting their ecocentric attitudes towards recycling were reflected below:

We always set apart them at home because if they are mixed with others, they go to the same garbage heap; therefore, garbage men cannot easily distinguish them and may not send to recycling center. (M 5)

My teacher tells me that we should separate bottles, papers and cans and put into different bins because we should make a contribution for nature protection. (M 12)

In these different boxes, they will be recycled and introduced to the market again. (F 11)

In bottles bins, bottles are collected and in cans bins cans are collected. Then someone recycle these old boxes and cans into new ones in order not to pollute our world. (F 2)

4.3.2 Reusing

Under this dimension preschool children's attitudes toward reusing was also investigated. A huge number of preschool children (28 out of 40) declared that they gave toys to other kids or reused when they did not play them anymore (Table 35).

Table 34: Preschool children's attitudes towards reusing regarding to reuse old toys

Recycling- Reusing		
Reusing	Giving old toys to other kids or reusing when do not playing them anymore	
Gender	Answers	
	Yes	No
Female	13	7
Male	15	5
Total	28	12

However when the reason of this attitude was asked only five of them (out of 28) explained that they did not want to waste them and they mentioned that these kinds of materials can be reused (Table 36).

Table 35: Preschool children's attitudes towards reusing regarding the reason of reusing old toys

Recycling- Reusing		
Reusing	The reason giving old toys to other kids or reuse when you do not play them anymore	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	3	13
Male	2	10
Total	5	23

Examples of these limited ecocentric expressions were given below:

> I do not want to waste them and so I never throw them away. I play with them very carefully and my mother saves my old toys. (M 7)

> We give the old things that we do not use to other people. For example, I gave my bicycle to my friend, because in order to produce new bicycle, much money, time and energy is required. (F 8)

Moreover, preschool children were also asked that what happens if we throw away the things instead of reusing. Seven preschool

children (out of 40) mentioned that throwing away old toys causes wastefulness (Table 37).

Table 36: Preschool children's attitudes towards reusing regarding the result of reusing old toys

Recycling- Reusing		
Reusing	The result giving old toys to other kids or reuse when you do not play them anymore	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	4	15
Male	3	18
Total	7	33

Preschool children's ecocentric attitudes towards reusing were reflected with following sentences:

> If we throw them away, we needlessly waste them. (F 16)

> Throwing them away is a very bad thing because we waste it if we do so. There are many ways to use them again. (M 5)

Under this sub-dimension preschool children's attitudes on the styles/ideas of reusing old toys instead of throwing them away were also investigated. Six preschool children (out of 40) emphasized recycling of them in various ways.

Examples of children's responses were reflected below:

> Instead of throwing old toys away, we can give them to our friends or we can try to fix them. For example the ear of my bear had broken but we did not throw it away; my mother sewed it. (M 9)

> We can use them as junk materials. For example, we can make bauble with old CDs. (M 13)

> If an old toy is teared, we can sew it. We can fix them, after fixed, old toys may seem as new ones. (F 2)

> We save my old toys for my sister. (F 1)

In summary, preschool children's attitudes related to recycling and reusing indicated that many of them cannot define meaning of recycling and they do not have a sense of ecocentric attitudes to contribute to recycling process.

> R: Do you know "M…" what is recycling?
> M19: Yes I know, recycling is that when you get bored in school, you recycle to home.
> R: I do not mean so; do you know what is recycle bin?
> M19: Hımmm! I had seen it once.
> R: Where?
> M19: On my uncle's computer screen.

Similar with the other sub headings, children gave ecocentric answers at a first glance for the question of reusing whereas their answers for the "why" questions were anthropocentric.

> R: What about your old toys that you do not want to play anymore?
> F21: If I do not want to play them anymore, hımmm… My mother gives them to children's of doormen.
> R: Why?
> F21: Because I get bored to play with them; I need new and more beautiful ones. Once leg of my doll was broken and my mother gave it to A.
> R: Who is A.?
> F21: The doorman's girl. They are very poor and A. does not have a doll to play.
> R: Hımmm. You preferred to give your broken doll to A. instead of throwing it away. Ok. What will happen if you throw your doll away?
> F21: It would not be possible for A. to play my old doll.

A summary sketch of preschool children's attitudes towards recycling- reusing was illustrated (Figure 4).

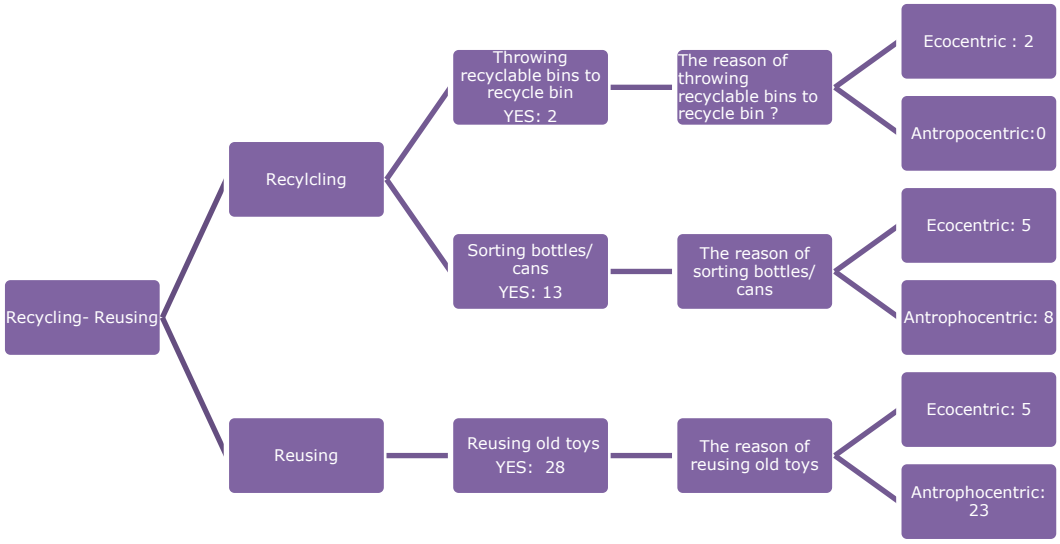

Figure 4 Summary of preschool children's attitudes Recycling-Reusing

Preschool children's attitudes toward recycling- reusing appeared not to differ based on gender. Both girls and boys of this study had limited knowledge of recycling and a very small number of them had ecocentric attitudes towards recycling.

4.4 Living Habits

The final dimension for the preschool students' environmental attitude was titled as "Living Habits". Under this dimension,

preschool children were asked three questions in order to investigate their attitudes towards playground preferences, residence preferences and transportation preferences. The answers of the preschool children, considering gender differences, were presented in the following sections.

4.4.1 Playground Preferences

Preschool children's playground preference was investigated through the question "Do you like playing outside or not?" Thirty of children (out of 40) reported that they like playing in outside (Table 38).

Table 37: Preschool children's attitudes towards playground preferences regarding to like playing outside

Living Habits		
Playground Preferences	Liking to play outside or not	
Gender	Answers	
	Yes	No
Female	13	7
Male	17	3
Total	30	10

Moreover, 11 preschool children among thirty explained the underlying reason why they like playing in outside within the ecocentric point of view (Table 39).

Table 38: Preschool children's attitudes towards playground preferences regarding the reason of playing outside

Living Habits		
Playground Preferences	The reason why like playing in outside	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	6	10
Male	5	9
Total	11	19

Preschool children's responses reflecting their ecocentric attitudes towards playground preferences were presented below through examples from their responses.

> I would like to take fresh air while playing therefore, I prefer to play outside. (M 16)

> I would like to live in such a place that is full of animals. I would like to feed them. (M 11)

> I like playing outside because I love animals, I love feeding them. While playing, sometimes, I feed them by milk. (F 2)

> Children love playing outside very much because there are trees, flowers and fresh air in outside. (F 3)

On the other hand, 19 preschool children (out of 40) reflected their anthropocentric attitudes towards playground preferences as exemplified below:

> I like playing outside since lots of my friends play in the park with sand. (M 7)

> I always want to play outside but my mother do not allow me to go out alone. I can ride bicycle and I can have fun with my friends. (M 12)

> I like playing in outside since there are many toys in the park and also I can play rough and tumble. (F 10)

> I love outside play. I love parks and I love playing with my friends in the park with many toys. (F 18)

4.4.2 Residence Preferences

Under living habits dimension, preschool children's attitudes toward residence preferences were also investigated. Most of the preschool children (38 out of 40) expressed that they would like to live places where there are more plants and animals rather than crowded places (Table 40).

Table 39: Preschool children's attitudes towards residence preferences regarding to living places where are not crowded

Living Habits		
Residence Preferences	Living places where there are more plants and animals rather than crowded places	
Gender	Answers	
	Yes	No
Female	18	2
Male	20	0
Total	38	2

Additionally, preschool children were asked about the reason why they want to live a place where there are plenty of animals and plants. Twenty of them explained the reason valuing ecocentric point of view as reflected (Table 41).

Table 40: Preschool children's attitudes towards residence preferences regarding the reason of living places where are not crowded

Living Habits		
Residence Preferences	Reason why want to live place where plenty of animals and plants live	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	10	10
Male	10	8
Total	20	18

Quotations below reflected preschool children's ecocentric attitudes towards residence preferences.

> I would like to live such a place that there is no noise, far from cars because cars make uproar. (M 15)

> I would like to feed animals therefore I would like to live such a place. (M 14)

> This kind of houses that settled in the garden with many trees and flowers make me very happy. (F 8)

> I love natural life, I love running freely among trees. (F 6)

On the other hand, 18 of preschool children gave answers that reflected their anthropocentric point of view on residence preferences as presented below:

> I would like to live such a place in which many animals live because animals save us from burglars. (M 1)

> I want to live in that house because if we live in such a house, my mother let me play in outside. There is no car here; therefore, I can ride bicycle. (M 12)

> I like such houses; they are very beautiful and big. If we have such a big house, I would have my own room. (F 1)

> I do not like our home because it is too high and I do not like high houses. There is not any huge area to play near tour house but in such a house, it is very funny to play. (F 5)

4.4.3 Transportation Preferences

As a final sub topic for this section, preschool children were asked about the kind of transportation they use to school to evaluate their living habits. Thirty preschool children (out of 40) stated that they go to school by car while 10 stated that they walk to school (Table 42).

Table 41: Preschool children's attitudes towards transportation preferences regarding how to go to school

Living Habits			
Transportation Preferences	How do you go to school?		
Gender	Answers		
	By Public transportation	By Car	By Walking
Female	-	13	4
Male	-	17	6
Total	-	30	10

Afterwards, preschool children were asked if there is a relationship between environmental pollution and cars. Only six children (out of 40) could give an explanation for the relationship between environmental pollution and cars as reflected (Table 43)

Table 42: Preschool children's attitudes towards transportation preferences regarding to know the relationship between environmental pollution and cars

Living Habits		
Transportation Preferences	Knowing relationship between environmental pollution and cars	
Gender	Answers	
	Yes	No
Female	2	20
Male	4	14
Total	6	34

Among six preschool children four defined the relationship between environmental pollution and cars from the side of ecocentric framework (Table 44).

Table 43: Preschool children's attitudes towards transportation preferences regarding the relationship between environmental pollution and cars

Living Habits		
Transportation Preferences	Relationship between environmental pollution and cars	
Gender	Attitudes	
	Ecocentric	Anthropocentric
Female	2	0
Male	2	2
Total (out of 6 children who defined the relationship between environmental pollution and cars)	4	2

Preschool children's responses below exampled their ecocentric point of view regarding the relationship between environmental pollution and cars.

> Cars emit gases and these gases are harmfull to atmosphere. We cannot see this effect. It is invisible. Day by day it will make the atmosphere dirty and in time, atmosphere will be dark in color. (M 12)

> Cars are not harmful to environment but their motor produces exhaust gases and so that exhaust gases are harmful for our world, they make our beautiful world dirty. (M 9)

> Exhaust of cars is excessively harmful to our world. (F 19)

> Cars consume petrol and petrol turns into exhaust gas. Exhaust gas is harmful for all living things like animals, plants and people. (F 11)

Preschool children's attitudes related to living habits indicated that many of them had ecocentric point view for playground preferences. On the other hand, as a result of an indepth inquiry about the reasons for this preference, they proposed an anthropocentric rationale, as the following examples indicated:

> R: Some kids like playing in outside but others do not like playing outside. Which of the two groups of children you are like?
> M 8: I like playing in outside very much rather than inside.
> R: Why do you like playing outside?
> M 8: Because, there are lots of toys and friends outside. I bike, play with ball and I can have fun with my friends.

On the contrary, preschool children valued more ecocentric attitudes towards residence preferences when the underlying reasons were investigated.

> R: Some kids like to live in crowded places but other kids like to live in places where there are lots of plants and

animals. Which of the two groups of children you are like?
F 11: I would like to live such a place in which there are lots of animals and plants.
R: Why do you like to live in places where there are more plants and animals?
F 11: I love animals very much, they make our world beautiful; and also there would be lots of plants and flowers in such places. Moreover, there are not many cars that are harmful for the environment.

The final finding of this section is that, preschool children of this study had anthropocentric attitudes toward transportation preferences as reflected below:

R: Some kids go to school by school bus with other children but other kids go to school by family car alone. Choose which of the two groups of the children you are like?
F 7: I come to school by car with my father.
R: Do you think that there is a relationship between environmental pollution and cars?
F7: No…
R: Some kids go to school by school bus with other children but other kids go to school by family car alone. Choose which of the two groups of children you are like?
M 17: I come to school by walk with my sister.
R: Do you think that there is a relationship between environmental pollution and cars?
M 17: Yes, cars are harmful for us and streets.
R: Why do you think that cars are harmful for people and street?
M 17: They can crash us, we can die… And big cars and trucks damage asphalt and streets. They are very heavy, streets cannot carry them.

Figure 5 presented a brief summary of preschool children's attitudes towards living habits.

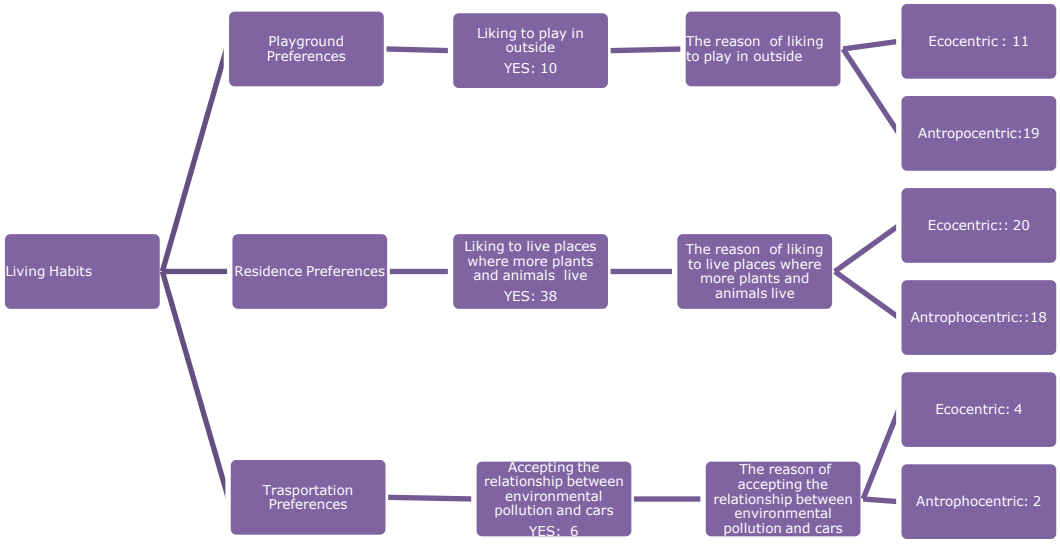

Figure 5 Summary of preschool children's attitudes - Living Habits

Above and beyond, the answers of preschool children indicated that gender seemed not to have an influence on their attitudes towards living habits. Both girls and boys gave ecocentric answers for the playground preferences at a first glance whereas their answers to "why" questions can be explained by anthropocentric point of view. Similarly, no differences were observed in residence preferences sub- dimensions between girls and boys. Most of boys and girls valued ecocentric attitudes. In a similar way, there is not a difference between boys and girls in terms of transportation preferences; a very small number of

children had ecocentric attitudes towards transportation preferences.

CHAPTER V

DISCUSSION

In this chapter a brief summary of the study including research questions, methods, and key findings were provided. Afterwards, key findings were discussed in detail and recommendations for further studies and implications were presented.

5.1 Summary of the Study

Investigating preschool children's environmental attitudes plays an important role in enhancing their ecocentric attitudes towards environmental issues. Forming environmental attitudes beginning from early years is a key way of dealing with environmental problems of twenty first century (Biriukova, 2005; Nikolaeva, 2008). The current study was intended to investigate preschool children's (5-6 years of age) attitudes towards environmental issues with an emphasis on gender differences.

The study is comprised of 40 preschool children; twenty two girls and eighteen boys. In order to make an in depth investigation about environmental attitudes, children were one-to-one interviewed by using the adapted form of the scale: "Children's Attitudes towards Environmental Issues- Preschool Version" (Musser & Diamond, 1999). The interview sheets were regarded as data source of the study. Qualitative research techniques were utilized for data analyses and children's attitudes towards environmental issues were grouped, based on the framework of Thompson and Barton (1994), into two categories namely ecocentric and anthropocentric. Moreover, the effect of gender

on environmental attitudes of preschool children was examined. The key findings of the current research were presented as follows.

5.2 Key Findings

5.2.1 Consumption Patterns

- Preschool children preferred the water off when they did not need to use it.
- The underlying reason why preschool children turned the water off indicated that children stand for their own benefits, not for the nature.
- Preschool children were worried about the disadvantages of water scarcity in terms of life quality.
- Preschool children generally used only one side of paper while drawing or writing.
- Preschool children rarely mentioned disadvantages of deforestation advocating benefits of nature.
- Preschool children turned the light off when they left the room.
- The reason why preschool children turned the light off reflected that children were on the side of human benefit, not that of the nature.
- Preschool children's attitudes of consumption seemed not to differ according to gender.

5.2.2 Environmental Protection

- Preschool children did not like bringing plants and bugs home.
- The underlying reason for not bringing bugs home was found out to be that they were afraid of being harmed by bugs, which reflected their anthropocentric attitudes towards bugs.
- Preschool children reported that they generally like feeding birds, yet they are afraid of being harmed by birds.
- Preschool children valued animals and respected them.
- The underlying reason for animals be to important for preschool children is to take advantage of them for a higher quality of life.
- Preschool children did not want to do harm to animals; therefore, they did not disturb or catch animals.
- Preschool children had a sense of protecting wild animals as well as supporting their survival.
- Preschool children did not assume responsibility for the garbage around.
- Preschool children were aware of disadvantages of environmental pollution for humans.
- Preschool children's attitudes of environmental protection appeared not to be influenced by gender.

5.2.3 Reusing- Recycling

- Preschool children's knowledge about recycling was extremely limited. Preschool children aware of recycling did not have access to recycle bin.
- Preschool children were willing to give their old toys away to other kids; however, they did not mind waste management issues.
- Preschool children's attitudes toward recycling- reusing did not differ in terms of gender.

5.2.4 Living Habits

- Preschool children preferred to play outside.
- Preschool children would like to live in places where there are more plants and animals than live in crowded places.
- Preschool children of this study reported that they went to school by car.
- Preschool children did not mention anything about the relationship between environmental pollution and cars.
- Preschool children's attitudes towards living habits seemed not to be affected by gender.

5.3 Discussion

5.3.1 Preschool Children's Attitudes towards Environmental Issues

Consumption Patterns

The current research findings indicated that almost all of the children had an inclination to save water, electricity and paper. A similar result was obtained by the study of Grodzinska-Jurczak, Stepska, Nieszporek, and Bryda (2006) that aimed at exploring preschooler's environmental attitudes. Most of the children involved in their study were reported to use water and electricity carefully and save paper. Furthermore, the current study investigated the underlying reasons of children's attitudes. Children of this study presented their anthropocentric attitudes while explaining the reasons of consumption patterns with a concern of life quality. Preschool children's attitudes of the current study, towards water, electricity and paper use, can be defined as in favor of human and through source limitation in daily life.

The reasons of their anthropocentric attitudes can be explained by Piaget's stage theory. According to Piaget, between the ages of two and seven, preschool children are still in preoperational stage on which "egocentrism" was considered to be a major characteristic of preschool children. Moreover, during these years preschool children tend to care about only their own perspective and they fail to understand other's views (Piaget, 1959). Hence children's anthropocentric attitudes towards consumption patterns can be explained by their age and cognitive

development. Children value energy resources since they need to use them to sustain their life and to increase their quality of life. In this regard, relevant literature supports this claim suggesting the effect of age on environmental attitudes (Alp, Ertepinar, Tekkaya & Yılmaz, 2006; Kwan & Miles, 1998; Musser & Malkus, 1994). As Rickinson (2001) asserted that youngsters' environmental concerns can develop by age; attitudes towards environmental issues may convert from anthropocentric to ecocentric by the course of age.

Yet, in the literature there are limited studies (Domka, 2004; Palmer, Grodzinska- Jurczak & Suggate, 2003; Wilson, 1996) that investigated the impact of environmental education on younger children's environmental attitudes. Environmental attitudes of preschool children can be enhanced by environmental education programs including both indoor and outdoor activities with a view that environmental attitudes formed during the early years of life have long lasting effects. Therefore, environmental education of preschool children has a key role in the formation of ecocentric attitudes towards environmental issues (Biriukova, 2005; Musser & Diamond, 1999; Nikolaeva, 2008).

However, in Turkey, although the National Early Childhood Education Curriculum presented a baseline for environmental education activities in preschool years, educational hands on experiences provided to preschool children are limited (Akçay, 2006). Hence, the other underlying reason of preschool children's anthropocentric attitudes towards consumption

patterns may be regarded as the inadequacies of environmental education experiences in preschool classrooms.

Environmental Protection

Findings of the current study indicated preschool children's concern about the protection of environment including animals, plants and their surroundings. It was also reported by Grodzinska-Jurczak, Stepska, Nieszporek & Bryda (2006) that most of the children respected animals and plants. Yet, the reasons of children's positive attitudes were somewhat controversial. This study revealed that some children indicated the benefits of animals for people. These children asserted that people derived many benefits from animals in terms of nutrition and transportation. According to the children, animals were just tools for a more qualified life. Similar to the current study, Domka (2001) investigated children' attitudes towards animals and concluded that children did not like some animals including wolves, amphibians, reptiles and spiders. They thought that animals were present for people. According to Domka (2001), children see the environment from the viewpoint of the human in line with the Piagetian approach that preschool children of two to seven years old are in preoperational stage that is dominated by egocentrism (Piaget, 1954).

Egocentrism refers to children's tendency to think only from their own perspectives and not to be able to consider other viewpoints (Keenan& Evans, 2009). Children in this stage may have difficulty in understanding environmental protection on part of the environment (Wilson, 1994). However, Fratczak reported

that (as cited Domka, 2004) preschool children enrolling in an environmental education program had ideas about environmental protection issues and they developed positive attitudes towards environmental protection rules such as "do not pick flowers" "do not break branches" and "feed the birds".

At this juncture, environmental education plays a key role in enhancing preschool children's positive attitudes towards animals and plants (Prokop & Tunnicliffe, 2008). Similarly, Jaus (1984) conducted an intervention about environmental protection issues and provided children opportunities to have experiences with animals and plants aiming at enriching elementary school students' environmental attitudes and reported that environmental education programs had positive effect on environmental attitudes. In this regard, as stated by Bandura (1986), attitudes develop from experiences; hence, early childhood education settings should expose children to stimulants about environmental protection issues such as caring for a pet in the classroom and gardening as well as assuming responsibility for environmental protection. Similarly, as reported by Kidd and Kidd (1990), animal-related experiences, such as visiting animal shelters and livestock farms, have positive impact on children's attitudes towards animals and environment.

Although discovering the impact of environmental education on preschool children's environmental attitudes was beyond the scope of the current study, the underlying reasons of anthropocentric attitudes of preschool children towards environmental protection may be explained by the inadequacies

of early childhood environmental education in Turkey. Despite the fact that Early Childhood Education Curriculum (MONE, 2006) provides a framework for environmental studies, practical implications are scarce in preschool classrooms (Kesicioğlu & Alisinanoğlu, 2008). Hence, in order to enrich preschooler' environmental attitudes, environmental education programs should be integrated into early childhood education settings.

Recycling and Reusing

In this study, a very few number of preschool children had ecocentric attitudes towards recycling and reusing, valuing their benefits for nature, similar to the studies in the literature. In a similar way, a study conducted by Grodzinska, Stepska, Nieszporek, Bryda (2006) in order to investigate preschool children's attitudes toward environmental issues and environmental knowledge revealed that a small percentage of children re-used various items and separated recyclable materials in order to throw to recycle bin. Attitudes towards recycling and reusing of preschool children revealed that they had limited knowledge about the issues.

According to Nikolaeva (2008), environmental knowledge is the predictor of environmental attitudes. In fact, he claimed that preschool children's attitudes towards environment were the sign of their level of knowledge in relation to the environment. Furthermore, if children are not informed about recycling and its importance for sustainability, they should not be expected to reflect proper attitudes towards recycling of materials (Nikolaeva, 2008). This result indicated the need of

environmental education for preschool children. Basically, preschool children are capable of understanding the concepts of reusing and recycling. Palmer (1995), for example, explored that 4-year-olds understood that waste products were managed and collected in an organized manner. Moreover, they knew about the concept of recycling and they had an idea about what it meant. Furthermore, 6-year-old children recognized which materials were recycled and which were not. Furthermore, the study reported by Palmer, Grodzinska- Jurczak, and Suggate (2003) revealed that environmental education programs were effective on environmental attitudes towards reusing and recycling. As the authors reported, children from England enrolling in a structured environmental education program had better attitudes towards waste materials than their Polish accompaniers.

To conclude once more, environmental education in early childhood holds a key role in enhancing young children's environmental attitudes and antrophocentric attitudes of preschool children towards recycling- reusing issues may be explained by inadequacies of environmental education programs in preschool classrooms.

Living Habits

The participants of this study valued environmentally friendly living habits, namely playground and residence preferences. However, preschool children preferred to play outside since they wanted to utilize facilities of nature, which refers to anthropocentric attitudes. Likewise, most of them would rather

live places where there are more plants and animals than live in crowded places minding quality of life, which refers to anthropocentric attitudes.

Although the current study did not inspire the effect of residence on preschooler's environmental attitudes, Grodzinska- Jurczak, Stepska, Nieszporek and Bryda (2006) indicated that preschool children's attitudes toward environment were dependent on their place of residence. In fact, most of the children with positive environmental attitudes were reported to live in rural areas. The underlying reason why children living in rural areas have more positive attitudes can be that these children are provided with much more opportunities to have experiences with the natural environment as Robertson (2009) claimed. According to Robertson (2009) opportunity is a significant attribute in shaping children's environmental attitudes. Children should be provided with a place to play outside such as a park, a farm or a beach in order to adopt ecocentric attitudes towards living habits.

Similarly, Brofenbrenner (1986) declared that environment was a dynamic unit that had impact on children's life. Environmental settings in which a child lives such as home, school, neighborhoods, playgrounds, etc. have a powerful impact on child development. Besides, the child is an active recipient whose personality is formed by the environment. In a similar manner, the relevant literature proposed that early life outdoor experiences had an impact on formation of environmental attitudes. The more children have opportunities to spend time outdoors during their early childhood, the more they adopt

ecocentric attitudes towards environmental issues (Ewert, Place & Sibthorp 2005).

Although clarification of urbanization effect on preschool children's environmental attitudes is beyond the scope of the current study, one of the underlying reasons of anthropocentric attitudes may be reported as urbanization. Urbanization restricts children's opportunities to have experiences with the natural environment, which prevents them from developing ecocentric environmental attitudes (Robertson, 2009).

In this regard, significance of environmental education in early childhood arises once more. In order to prevent negative outcomes of urbanization on environmental attitudes of preschool children, outdoor play experiences can be emphasized. Besides, early childhood education programs should cover a variety of educational experiences in outdoor settings; indeed, preschool children can be provided with opportunities to spend time outdoors (Olgan & Kahriman, 2009).

5.3.2 Factors affecting Children's Attitudes towards Environmental Issues

The current study also aimed at investigating the impact of gender on environmental attitudes of preschool children. Findings of this study indicated that children's attitudes towards environmental issues in terms of consumption patterns, environmental protection, reusing-recycling and living habits did not differ depending on gender.

In the literature there are studies supporting this claim. For example, the study conducted by Musser and Diamond (1999) developed and administered the scale called Children's Attitudes toward Environment Scale- Preschool Version (CATES- PV to 42 preschool children (25 girls and, 17 boys). The results indicated that children's attitudes towards environment were generally positive and they found that children's environmental attitudes did not differ in relation to gender. In a similar way, Haktanır and Çabuk (2000) investigated 4- 6 year-old preschool children's perceptions and ideas about environmental issues. The research included 80 children from 12 private preschools. Researchers utilized a scale that was developed by the researchers and rated children's answers related to 18 environmental problem cases. In the study, different statistical techniques were used to examine the effects of gender, age, and parental variables. According to the results of this study, gender was not found to be a significant factor in determination of children's attitudes related to environmental issues. On the other hand, Kesicioğlu and Alisinanoğlu (2008) conducted a study to explore preschool children's attitudes towards environmental issues. The study included 353 preschool children of 60-72 months enrolling in preschools affiliated to the Ministry of National Education. Researchers utilized the Environmental Reaction Inventory as a scale and indicated that attitudes of the preschool children towards the environment differ depending on gender. Boys were reported to have more positive attitudes towards environmental issues. On the contrary, relevant studies conducted with older children suggested that females tended to be more interested in environmental issues and they had more positive attitudes (Alp,

Ertepinar, Tekkaya & Yilmaz, 2006; Tuncer, Ertepinar, Tekkaya & Sungur, 2005).

In this juncture, Agenda 21 (UNESCO, 1992) that addressed major environmental issues of today's world should be referred as the report which regarded females as the target group to be supported about environmental issues since their role in bringing up young children who can adopt ecocentric environmental attitudes was worthwhile (UNESCO, 1992). Therefore, gender factor in relation to environmental issues should be more emphasized.

5.4 Educational Implications

The current study described environmental attitudes of 5-6 year-old preschool children taking the gender factor into consideration. Results of this study indicated that preschool children had mostly anthropocentric attitudes towards environmental issues in terms of consumption patterns, environmental protection, recycling- reusing and living habits.

As a final conclusion of this study, shaping ecocentric environmental attitudes during early years of life holds key importance for protection of the entire world as these years are sensitive for creation of long lasting ecocentric attitudes. Although Piagetian theory claimed that children were dominated by egocentrism during the early years of life and that they valued only themselves, early childhood environmental education is the good starting for bringing up ecocentric attitudes of young individuals. For that reason, during early years of life, environmental education programs should be developed.

Besides, early childhood education programs should cover environmental education activities both indoor and outdoor. In particular, outdoor learning area of early childhood education should be rich in natural beauty and diversity beside providing children with opportunities to enhance their environmental attitudes. Moreover, early childhood education classrooms should be equipped with the proper environmental education materials such as books and toys that encourage ecocentric environmental attitudes of preschool children. Furthermore, both preservice and inservice preschool teachers as well as school administrators should be aware about importance of environmental issues and how to integrate environmental issues into early childhood settings. In this regard, inservice training about environmental issues should be given for inservice preschool teachers and school administrators; also, both theoretical and practical courses should be opened for preservice preschool teachers in the related departments of universities (Erten, 2005).

Through integration of environmental education into early childhood settings and activities, children can acquire necessary attitudes to be concerned about the consumption matters only for the sake of nature; they can develop an ecocentric sense of protection for plants, animals and their surroundings; they can learn about recycling issues and its necessity for a sustainable life; besides, they can understand the value of the natural environment for all living things.

There are national early childhood education curriculums worldwide that also aim at enhancing children's environmental understandings. To illustrate, in Germany, besides all early

childhood education curriculums and institutions, "Natur- und Waldkindergarten" schools support preschool children's environmental understandings and provide them with a variety of opportunities to have a healthy interaction with the natural environment and its elements. In these kindergartens children can spend 3-4 hours outdoors walking and investigating nature. They learn to respect nature and its elements as well as developing ecocentric attitudes towards the environment (Akçay, 2006). Moreover, in American (New York), Sweden, and Japan early childhood education curriculum, environmental issues are integrated into early childhood education curriculum and children are guided to have experiences with environmental issues both in indoor and outdoor settings (Akçay, 2006). On the other hand, in Turkey, on the early childhood education level, there are not structured environmental education programs; yet, The National Early Childhood Education Program provides an appropriate baseline for environmental education programs in preschool years. However, hands on educational implementations in preschool classrooms need to be enriched and generalized.

5.5 Recommendations

Several recommendations can be made for further research in flourishing research area of early childhood environmental education.

First and foremost, as concluded in the current study, evaluating preschool children's environmental attitudes and underlying reasons are noteworthy; however relevant literature presents a gap about the issue. For that reason, repeated studies should be

conducted with different samples of preschool children investigating the effects of a range of variables through both qualitative and quantitative methods. To illustrate, children's attitudes towards environmental issues may be affected by their parents' attitudes; therefore, in order to make an in depth explanation about environmental attitudes of preschool children, families should be included in research design and parents' effects on environmental attitudes of preschool children should be investigated. Afterwards, opportunities to interact with natural environment can help children develop ecocentric attitudes. Therefore, further studies can examine preschool children's opportunities of having experiences in outdoor settings. In this regard, physical settings of early childhood education should be explored in terms of provided facilities for children to spend time outdoors. Afterwards, environmental education is very significant to foster ecocentric environmental attitudes of young children. Hence, the effects of ongoing environmental education programs in early childhood should be investigated.

Given the National Early Childhood Education Curriculum in Turkey, although the curriculum provides a baseline for enhancing preschool children' environmental attitudes, what kinds of educational activities about environmental issues are implemented exactly in preschool classrooms are controversial. For that reason, observational qualitative research studies should be designed to get ideas about the implemented educational activities relevant to environmental issues in daily routines of early childhood education settings. In this regard, role of the

preschool teacher on environmental attitudes of preschool children is also an important point worth to investigate. A preschool teacher's ecocentric environmental attitudes can have impact on her approach to curriculum implementations about early childhood environmental education. Hence, preschool teachers should be included in further research studies and their role in bringing up ecocentric individuals should be deeply investigated. In this regard, preschool teacher candidates and their educational background about environmental issues are also worth to investigate.

Last but not least, as a final recommendation for further research it may be declared that besides investigating ecocentric and anthropocentric attitudes of preschool children, their sustainable attitudes be inspired. Sustainable attitudes stand for a way that supports to meet human needs while preserving the environment and take place between ecocentric and anthropocentric sketch. In other words, sustainable attitudes create the balance between human and environment valuing both human needs and environmental protection (Didonet, 2008).

5.6 Limitations

The findings of this study were limited with responses of the 40 preschool children living in two different districts of Ankara. One of the limitations of this study was related to the interview protocol. The interview protocol included 15 main questions and many sub-questions; and it took approximately 30 minutes. This was a drawback for this study since 5-6 year-old preschool

children are able to give their attention to something for a short span of time. For instance, during data collection process, 2 children out of 42 got bored and wanted to give up the interview. The interview process was ended and these two sets of data were excluded from the data source.

Moreover, the findings of this study were based on verbal reports of preschool children; this is one of the limitations of this study since children in this age group naturally have limited talent of expressions themselves. In addition, children's responses related to environmental issues may be impacted by their parents' attitudes; this consists of one more limitation for this study.

Also, another limitation for the current study indicated that teachers could include environmental issues into daily education activities; hence children of this study could reflect their short term learning to their attitudes.

Final limitation of this study is unequal distributions of sample among the participants in terms of age. Moreover, in this research, a single type of data (interview transcripts) was analyzed.

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APPENDICES A - INTERVIEW QUESTIONS

CONSUMPTION PATTERNS
1. Some kids like to leave the water running when they brush their teeth but other kids always turn the water off. Question1a: Choose which of the two groups of children you are like? Question1b-1: Why do you turn the water off? Question1b-2: Why do you leave the water run? Question1c: What happens if water decreases? Question1d: What is source of water? From where does it come to house/ school?
2. Some kids use both sides of the paper when they draw or write but other kids use only sides of the paper when they draw or write. Question2a: Choose which of the two groups of children you are like? Question2b-1: Why do you use both sides of paper? Question2b-2: Why do you use only side of paper? Question2c: What is the paper made of? Question2d: What happens if we waste much paper?
3. Some kids leave the lights on when they leave the room but other kids turn the lights off when they leave a room. Question3a: Choose which of the two groups of children you are like? Question3b-1: Why do you leave the lights off when you leave the room? Question3b-2: Why do you leave the lights on when you leave the room?

Question3c: What happens to nature if we waste much electric?
ENVIRONMENTAL PROTECTION
1. Some kids like to look at plants and bugs outside but never bring them home but other kids like to bring home plants and bugs they find outside. Question1a: Choose which of the two groups of children you are like? Question1b-1: Why do you like to bring them home? Question1b-2: Why do you like to look at them? Question1c: What happens if we bring them home? Question1d: Where is their home?
2.Some kids like to feed the birds but other kids do not like to feed the birds. Question2a: Choose which of the two groups of children you are like? Question2b-1: Why do you like feeding birds? Question2b-2: Why do not you like birds? Question2c: Why do some kids like feeding birds? Question2d: Why some kids do not like feeding birds?
3.Some kids think that animals are important but other kids think that animals are not important. Question3a: Choose which of the two groups of children you are like? Question3b-1: Why do you think animals are important? Question3b-2: Why do you think animals are not important?
4.Some kids never disturb or catch animals they find outside but some kids like to disturb or catch animals. Question4a: Choose which of the two groups of children you are

likeQuestion4b-1: Why do you not touch or catch animals you find outside? Question4b-2: Why do you touch or catch animals you find outside?
5.Some kids think that wild animals should be protected but others think that wild animals may be killed.
Question5a: Choose which of the two groups of children you are like? Question5b-1: Why do you think that wild animals be protected? Question5b-2: Why do you think that wild animals may be killed? Question5c: Why people kill wild animals? Question5d: Do you know which animal is killed the most?
6.Some kids take garbage from the ground and throw them to rubbish bin but other kids do not take bins from the ground. Question6a: Choose which of the two groups of children you are like? Question6b-1: Why do you take them from ground and throw it to rubbish bin? Question6b-2: Why do not you take them from ground and throw it to rubbish bin? Question6c: What happens if we do not take them from ground and throw it to rubbish bin? Question6d: What happens if we take them from ground and throw it to rubbish bin?
RECYCLING - REUSING
1. What is recycling? Question 1a, 1b, 1c, 1d-1, 1d-2 were answered by the participants that knew what is recycling?

Question1a: Some kids throw recyclable bins to recycle bin but other kids throw things away when we're done with them.

Question1b: Choose which of the two groups of children you are like?

Question1c-1: Why do you throw recyclable bins to recycle bin?

Question1c-2: Why do not you throw recyclable bins to recycle bin?

2.Some kids sort their bottles/ cans and recycle them other kids don't sort their bottles and cans.

Question2a: Choose which of the two groups of children you are like?

Question2b-1: Why do you sort bottles and recycle them?

Question2b-2: Why do not you sort bottles and recycle them?

3.Some kids give toys to other kids or reuse when they do not play them anymore but other kids throw away toys when they don't play with them anymore.

Question3a: Choose which of the two groups of children you are like?

Question3b-1: Why do you give toys to other kids or reuse when you do not play anymore?

Question3b-2: Why do you throw away when you do not play your toys anymore?

Question3c: What happens if we throw away them?

Question3d: What can we do with our old toys instead of throwing away?

LIVING HABITS

1.Some kids like playing in outside but other kids do not like playing outside.

Question1a: Choose which of the two groups of children you are like?

Question1b-1: Why do you like playing outside?

Question1b-2: Why do not you like playing in outside?

2.Some kids like to live in crowded places but other kids like to live in places where more plants and animals live.

Question2a: Choose which of the two groups of children you are like?

Question2b-1: Why do you like to live in places where there are more plants and animals?

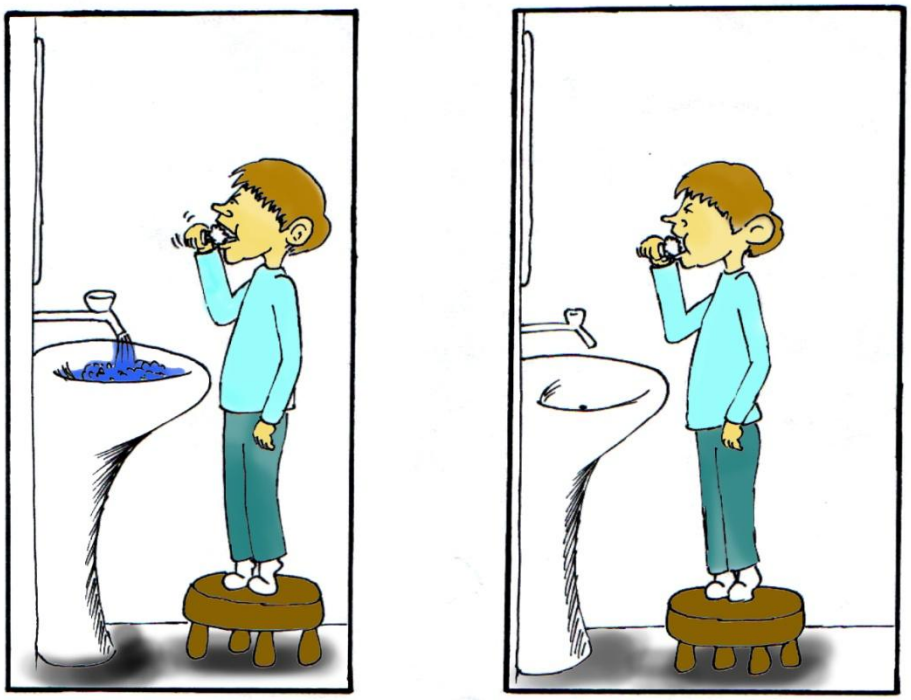
Question2b-2: Why do you like to live in crowded places?

3.Some kids go to school by school service or bus with other children but other kids go to school by car alone.

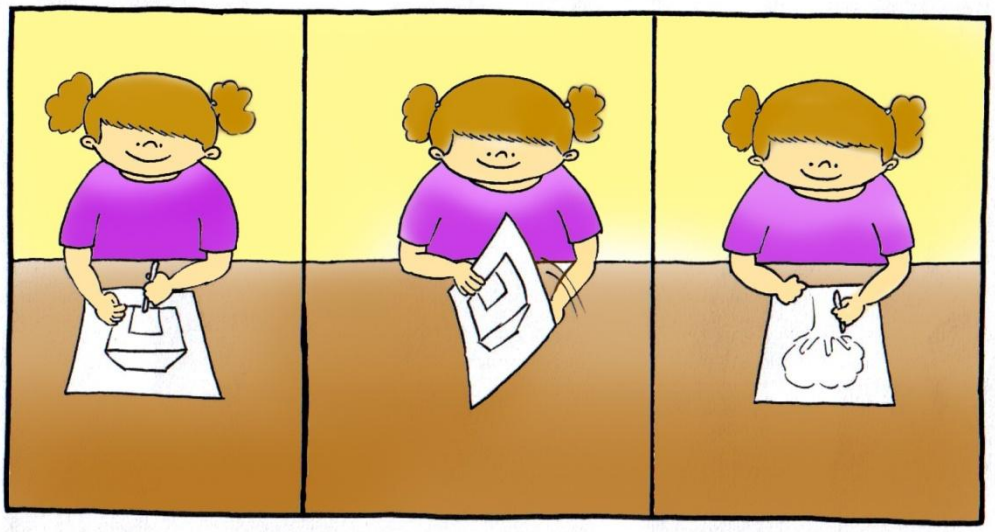
Question3a: Choose which of the two groups of children you are like?

Question3b: Is there a relationship between environmental pollution and cars?

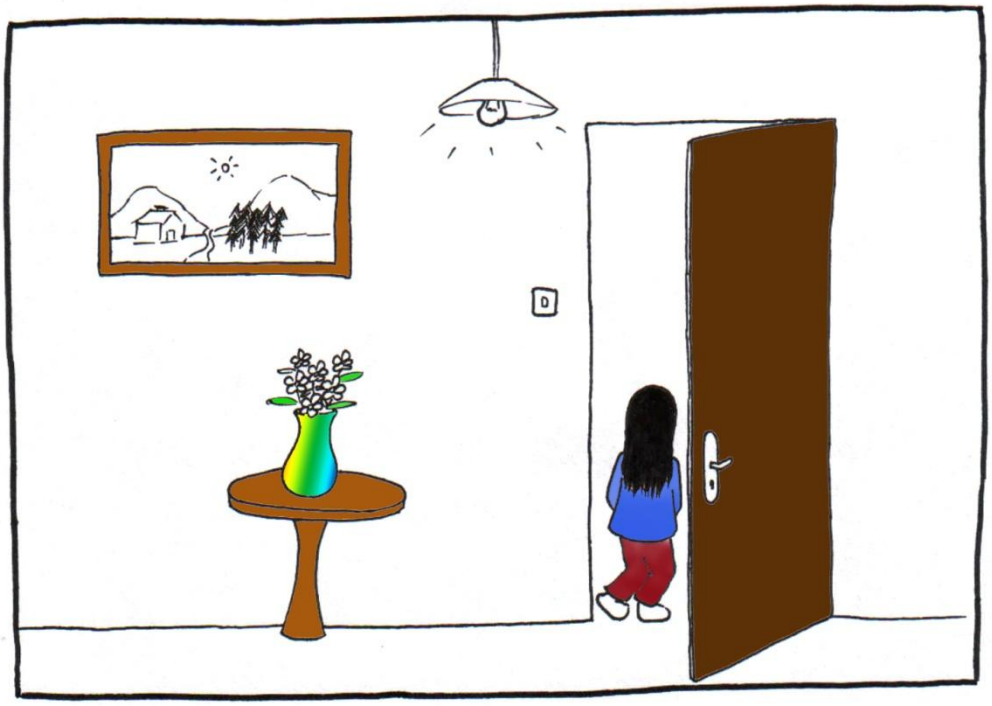
APPENDICES B – INTERVIEW PICTURES



Consumption Patterns -Question 1



Consumption Patterns- Question 2

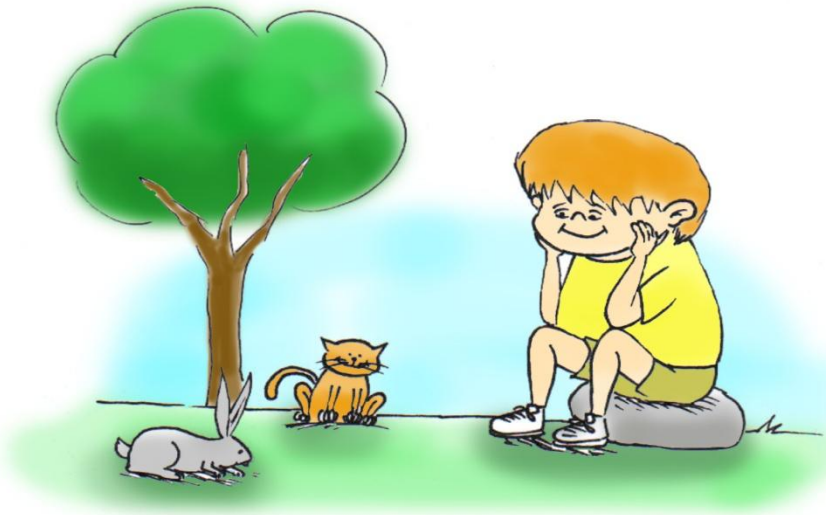


Consumption Patterns- Question 3

Environmental Protection- Question 1

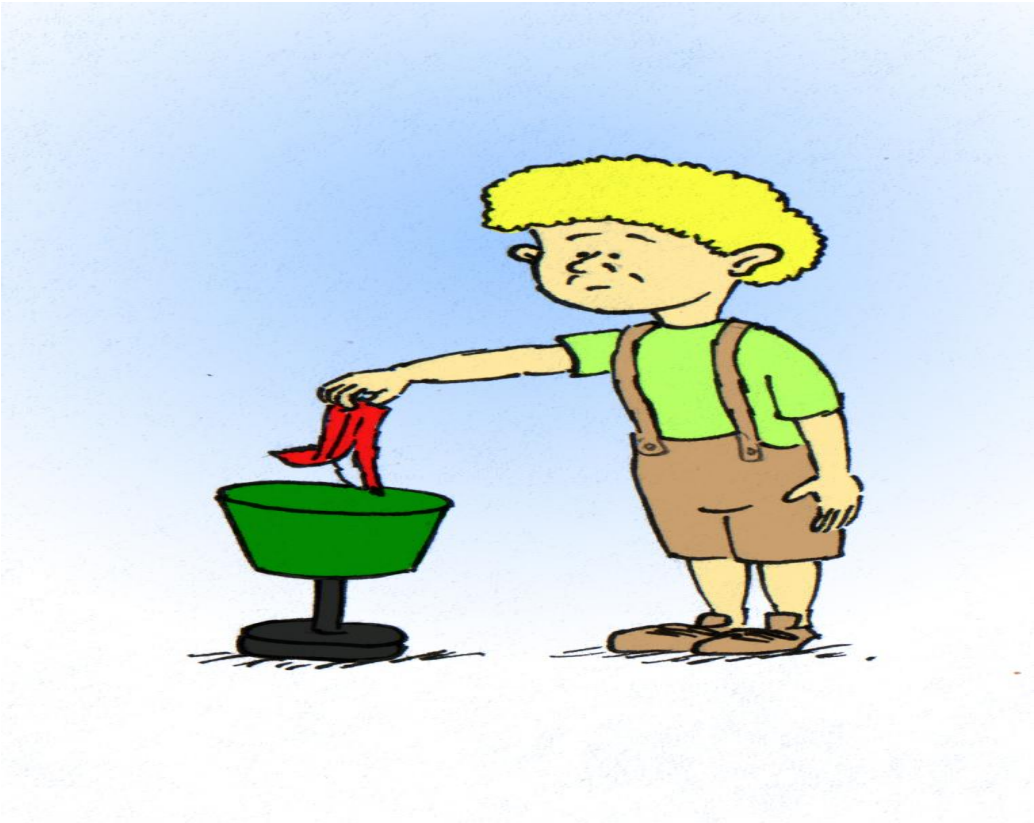
Environmental Protection- Question 2

Environmental Protection- Question 3

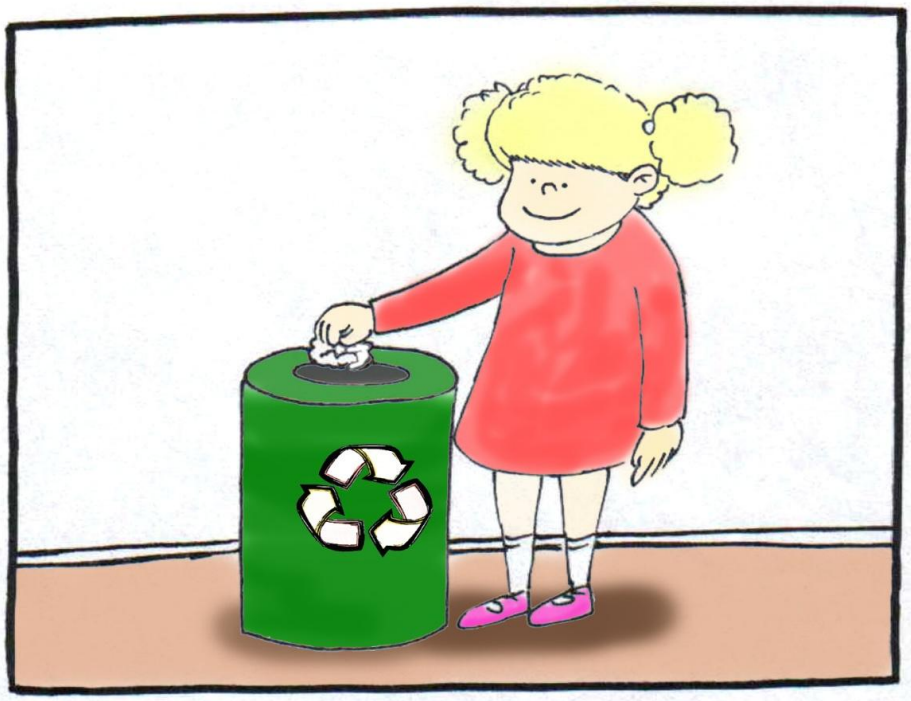


Environmental Protection- Question 4

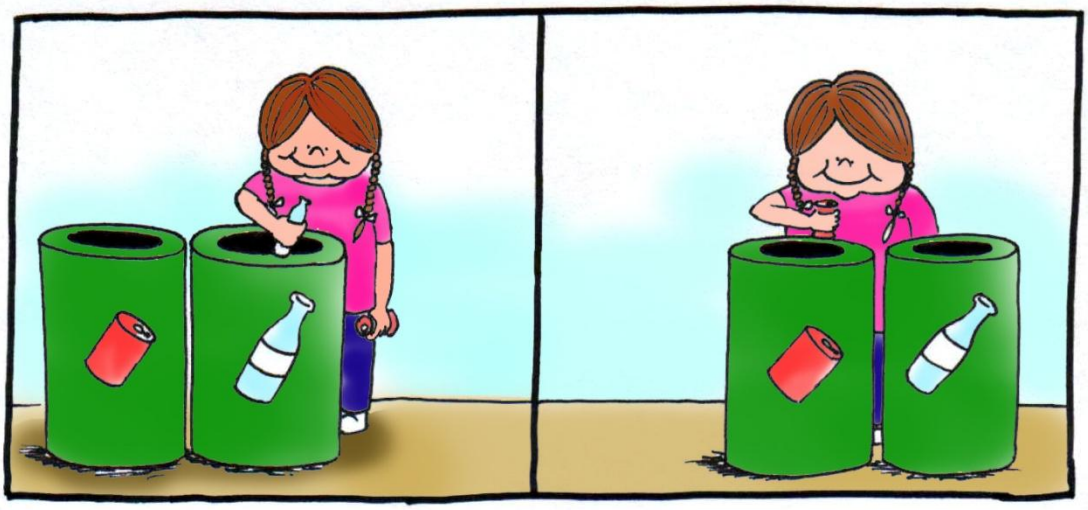
Environmental Protection- Question 5



Environmental Protection- Question 6

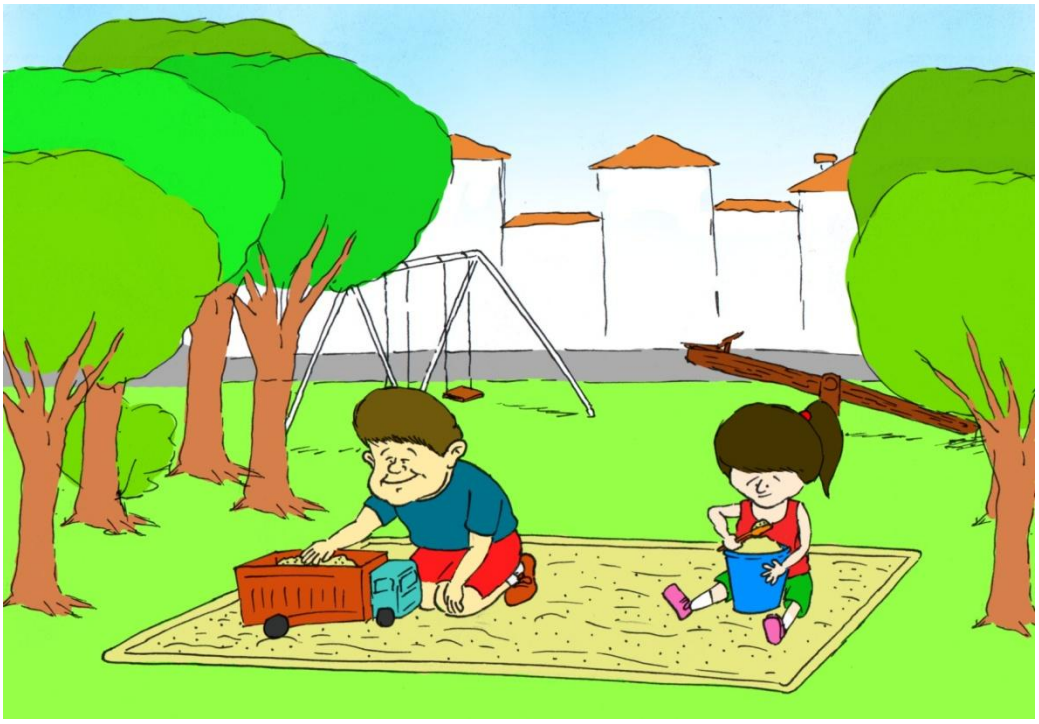


Recycling & Reusing- Question 1

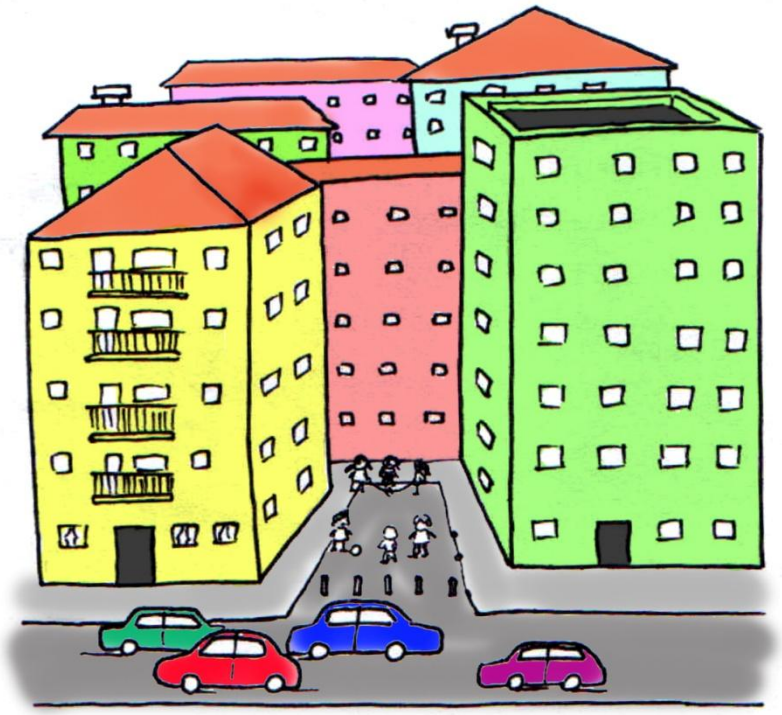


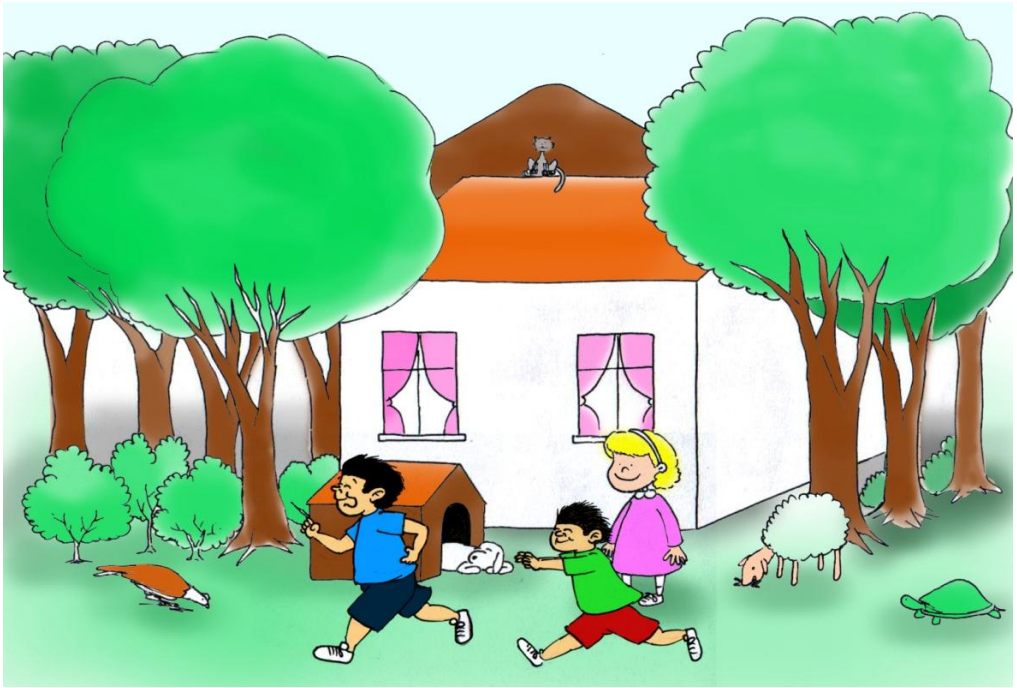
Recycling & Reusing- Question 2

Recycling & Reusing- Question 3

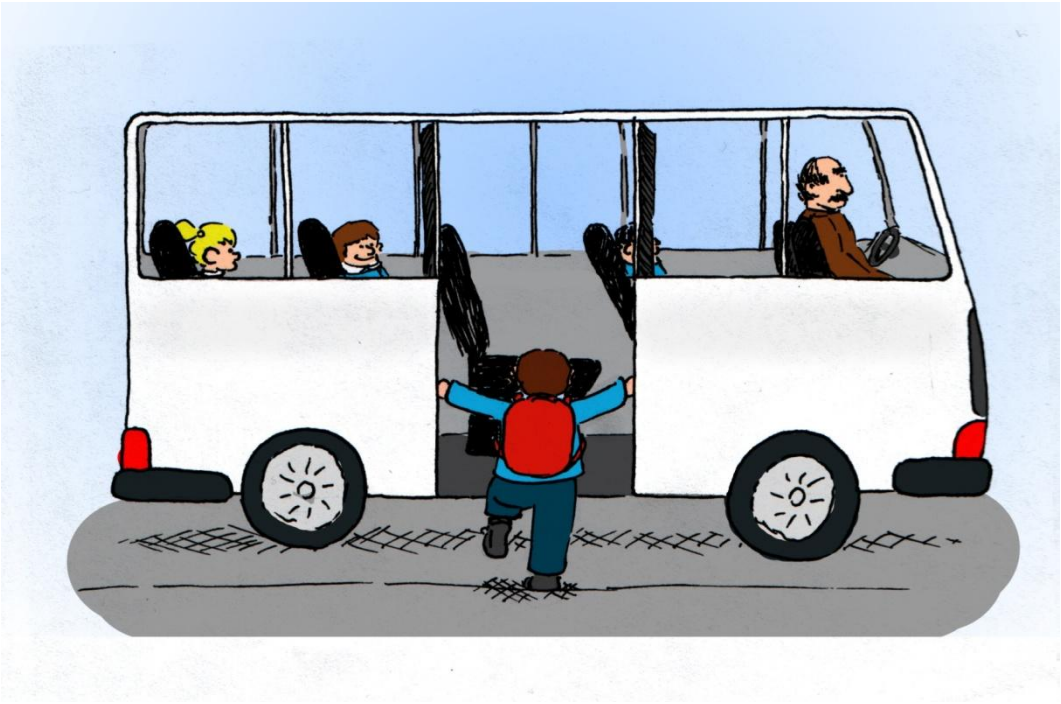


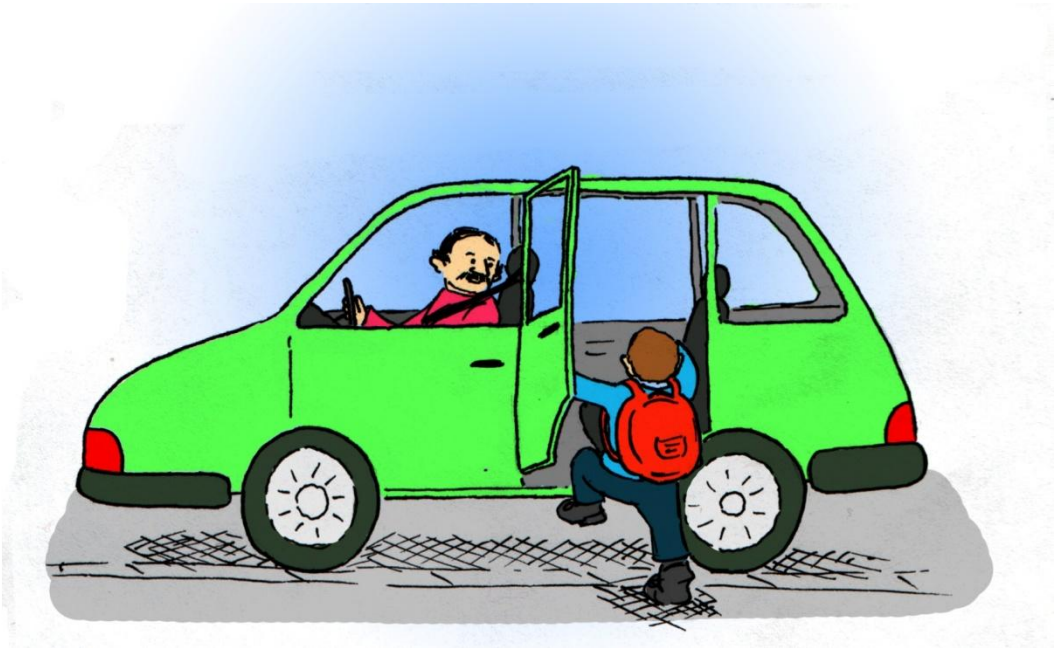
Living Habits- Question 1





Living Habits- Question 2





Living Habits- Question 3

APPENDICES C- ETHICAL PERMISSIONS

ODTÜ ETİK KURULU

İnsan Araştırmaları

Veli Onay Mektubu

Tarih

Sayın Veli

Orta Doğu Teknik Üniversitesi, Okul Öncesi Öğretmenliği Bölümünde yüksek lisans öğrencisiyim ve ODTÜ İlköğretim Bölümünde araştırma görevlisi olarak çalışmaktayım. Dr. Refika Olgan danışmanlığında yürütülen çocukların çevreye yönelik farkındalık ve tutumlarını araştırmakta olduğum Yüksek Lisans Tezi çalışmam kapsamında anaokulu 5 ve 6 yaş çocuklarının çevresel farkındalıklarını incelemeyi hedeflemekteyim. Bu nedenle, bu formun ve mektubun yollanış amacı çocuğunuzun da çalışmamıza katkıda bulunabilmesi için sizden gerekli iznin alınmasıdır.

Yapılacak olan çalışmanın temel amacı 5 ve 6 yaş çocuklarının çocuklarının çevresel farkındalıklarını değerlendirmektir.Bu araştırmada, okulun fiziksel özeliklerinin, eğitim ortamının, öğretmen ve anne baba tutumlarının çocukların çevreye ilişkin düşüncelerini nasıl etkilediği de incelenecektir. Ayrıca sosyal-ekonomik düzeyin çocukların çevreye ilişkin tutumları üzerindeki etkisi de araştırılacaktır.

Çalışma sunucunda elde edilecek bilgiler okul öncesi dönemdeki çocukların çevre ile ilgili farkındalıklarını anlamamızı sağlayacaktır. Bu sayede yapılan değerlendirmeler çocukların çevre eğitimi sürecine katkıda bulunacak ve çevreye ilişkin olumlu tutum ve davranışlarının erken yaşlarda kazanılması sürecine ışık tutacaktır.

Velisi olduğunuz öğrenciye çalışmada çevre ve çevreyi koruma ile ilgili 15 adet resim çifti gösterilerek onlara bu resimlerle ilgili bazı sorular sorulacaktır. Görüşmenin ortalama süresi 30 dakikadır. Veri toplanırken hiçbir şekilde isim ya da aile kimliğini belirleyici sorular sorulmayacaktır. Araştırma sonrasında araştırmacının güvenilir bilgiye ulaşması için araştırma sürecinde ses kaydı yapılacaktır. Hiç bir şekilde görüntü kaydı yapılmayacaktır. Çalışmamız katılımcıların fiziksel veya ruhsal sağlığını tehdit edici ya da onlar için stres kaynağı olabilecek unsurları içermemektedir. Çalışma sürecinde kullanılacak ölçek resimlerini ve çocuklarınıza sorulacak soruları incelemeniz mümkün olacaktır.

Katılım sonunda öğrenciler verdikleri bilgilerle, okul öncesi dönemdeki çocukların çevre ve çevreyi korumaya ilişkin farkındalık geliştirme sürecine katkıda bulunacaklardır.

Çocuklara sorulacak sorular ve gösterilecek resimler hiçbir şekilde kişisel rahatsızlık verecek olumsuz ögeler içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü çocuğunuz kendisini rahatsız hissederse görüşme sonlandırılacaktır.

Bu çalışmaya vediğiniz destek için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için İlköğretim Bölümü Araştırma Görevlisi Deniz KAHRİMAN ÖZTÜRK (Ofis: EFA- 37; Tel: 2107508; E-posta: odeniz@metu.edu.tr) ve/veya Öğrt. Gör. Dr. Refika Olgan

(Ofis:104; Tel: 210 40 65; E-posta: rolgan@metu.edu.tr) ile iletişim kurabilirsiniz.

Deniz KAHRİMAN ÖZTÜRK

Yukarıda açıklamasını okuduğum çalışmaya, oğlum/kızım _____'nin katılımına izin veriyorum. Ebeveynin:

Adı, soyadı: _____ İmzası: _____ Tarih: _____

Araştırmacını Adresi: Odtü Eğitim Fakültesi oda EFA-37 ODTÜ/ Ankara

Araştırmacının E-postası: odeniz@metu.edu.tr Araştırmacının Telefonu: 2107508

İmzalanan bu formu lütfen ..... aracılığı ile .....'e ulaştırın.

Çocuğunuzun katılımı ya da haklarının korunmasına yönelik sorularınız varsa ya da çocuğunuz herhangi bir şekilde risk altında olabileceğine, strese maruz kalacağına inanıyorsanız Orta Doğu Teknik Üniversitesi Etik Kuruluna (312) 210-37 29 telefon numarasından ulaşabilirsiniz.