



# Investigating Elementary School Students' Perceptions about Environment through Their Drawings

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## Abstract

The purpose of this study is to determine elementary school students' perceptions about environment through their drawings. The study was carried out during the spring semester of 2010-2011 academic year. A total of 429 elementary school students, including 68 fourth grade, 78 fifth grade, 97 sixth grade, 85 seventh grade, 101 eighth grade, participated in the study. The study was conducted by descriptive method and the data of the study were collected by draw-and-explain task. During the data collection students were asked to draw a picture of environment and explain their drawings. The results revealed that elementary school students usually draw humans, different kinds of plants and animals, constructions like houses and factories, abiotic factors such as mountains, lakes, sun in their drawings. Besides, 35.43% of students drew dirty, 59.21% of them drew clean and 5.36% of them drew both clean and dirty environments in their drawings. The results of the study also showed that with increasing age there is a decrease in the number of students drawing a clean environment and an increase in the number of students drawing a polluted environment. Students usually drew local environmental problems such as air pollution, soil pollution, water pollution and disordered urbanization. Based on the drawings it can be concluded that children see human as a part of the environment, think that they are affected by environmental problems as other living things and human based activities are the main causes of environmental problems.

## Key Words

Environmental Education, Drawings of Environment, Elementary School Students, Elementary School Students' Perceptions about Environment.

Since the first appearance of the human beings on earth, they have been affected by events taking place around and at the same time they have put influences on earth in various ways, somehow changed and destroyed it. In the ancient times, human beings created weapons from stones and metals, hunted animals to feed themselves, used animal skins to cover their bodies, and took shelters in caves (Adams, 1996). Until the 19th century, human beings thought that earth's resources they used for different purposes are limitless and inexhaustible, and did not realize the impacts of the harms they gave to environment on themselves (Doğan, 1988).

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Unconscious exploitation of natural resources and the nonrenewable nature of some of these resources resulted in continuous destruction of the natural balance and increase in environmental problems experienced on earth. Global warming, extinction of plant and animal species, rapidly increasing population, increasing consumption, irresponsible exploitation of natural resources, pollution of air, water and land, and nuclear pollution are the most important environmental problems we face today (Brown, 1991; Brundtland, 1987; Goodland, 1995; MacNeill, Winsemius, & Yakushiji, 1991; Redcliff, 1984). These environmental problems came to an extent threatening the future of humanity.

Environmental problems came to the agenda of the international community for the first time with the conference organized in Stockholm and since then they have become a common topic of discussions. In *Brundland Report* issued in 1987, the term 'sustainable development' was mentioned for the first time and this term was described as "meeting the needs of the present, without compromising the

ability of future generations to meet their own needs" (Brundtland, 1987, p. 43). For the measures determined in various meetings and conferences to be effective, education has an important role to play since through education people's awareness of environmental problems can be raised and as result people may develop more sensitive and responsible attitudes towards environmental problems (Flogati, 2006).

Though environmental education started to draw the attention of people in 1970s in the world, it came to the notice of the public with the approval of environment right in 1982 constitution in Turkey. The 56th article of the constitution stated that every human being has the right to live in a healthy environment and improving the environment and preventing pollution are the responsibility of every citizen and state. *The Seventh Development Plan* designed by President's State Planning Board put great emphasis on environmental education (Akçay, 2006). *The Eighth and Ninth Development Plans* drew the attention to sustainable development and the importance of education for sustainable development, and education for raising environmental awareness and attempts to inform the public about environment have entered into the priorities of the country. Moreover, the purpose of environmental education was described as equipping the citizens with required information, skills and values to exhibit environmentally-responsible behaviors. With renewal of course programs in 2004, environment-related issues were incorporated into the curricula of various courses.

Children should be interested in, aware of environmental problems and they should have positive attitudes towards, concerns and information about them so that these problems can be solved. Hence, studies carried out on environmental issues at elementary level of schooling are of great importance. Studies conducted in the world and in our country mostly focus on issues such as knowledge of environment, environmental literacy, and attitudes towards environment; hence, there is a paucity of research focusing on children's opinions about environment, their perceptions of environment and meanings they assign to environment. When the relevant literature is examined, it is seen that in general interviews have been used to elicit students' opinions and the means of getting students to draw pictures has been underexploited. Nevertheless, getting young children to draw pictures and then analyzing them can be an effective means of eliciting their opinions about an issue and exploring their inner worlds (Falk, 1981; White & Gunstone, 1992). According to Vygotsky (1971) picture and thought are closely interrelated. Arnheim (1969) states that visual arts are the so-

urces of visual thinking. According to Arnheim, thinking calls for symbols and symbols include thoughts. While children are drawing pictures, they clearly express their opinions and inner worlds. According to Artut (2002) as picture is considered to be a way of a child's perception of the outer world, it can help adults to communicate with the child. During the process of picture drawing, children express their opinions and feelings about an issue through colors, shapes and lines by synthesizing these opinions and feelings through their observations (Malchiodi, 2005). Drawing picture is both fun and a means of expression for a child (Hayes, Symington, & Martin, 1994; Johnson, 1993). In addition to these, use of pictures to explore children's opinions is a way of avoiding matching the children's opinions with those of the researcher (White & Gunstone, 1992). While children do not like answering the questions asked during interviews, when they are asked to draw pictures, they do it willingly, easily and without getting bored (Lewis & Greene, 1983). Moreover, drawing picture is an alternative means of expression for children who have some difficulties in expressing themselves orally (Chambers, 1983; Rennie & Jarvis, 1995). When the pictures drawn by children are analyzed well, they can provide detailed information about knowledge they possess and their development for the researcher (Yavuzer, 1997). Due to these potentials, children's drawings about environmental issues can yield valuable data about their opinions on environmental issues, information they possess about these environmental issues and their attitudes towards environment (Barraza, 1999).

There are few studies in the relevant literature looking into children's drawings about environment (Alerby, 2000; Barraza, 1999; Fleer, 2002; Keinath, 2004; Sadık, Çakan, & Artut, 2009; Shepardson, 2005; Shepardson, Bryan, Priddy, & Harbor, 2007) In the relevant literature produced in Turkey, there are some studies using children's drawings to elicit their opinions about some issues such as the image of a scientist (Buldu, 2006; Oğuz, 2007; Türkmen, 2008), perception of European Union (Belet & Türkkan, 2007), perception of family (Türkkan, 2004), perception of the Internet (Ersoy & Türkkan, 2009) and there is very limited research dealing with the analysis of children's pictures drawn about environmental issues. The research done so far indicates that there is a need for further studies looking at how children perceive environment and assign meaning to it (Yardımcı & Kılıç, 2010). Therefore, the present study aims to analyze the elementary school children's perceptions of environment through their drawings.





**Figure 1.**  
*Facial Expressions Used in Clean Environment*



**Figure 2.**  
*A Drawing of Houses and Cars in a Polluted Environment*



of the studies reported in the relevant literature. In studies by Keinath (2004) and Alerby (2000), it was revealed that children include biotic and abiotic factors which they can observe in their close environment in their drawings. It is remarkable that there is a frequent use of human figures among the figures of living things in the students' drawings. This indicates that the students view humans as a part of environment. The results of the studies dealing with the children's environment-related descriptions show that the students use living and non-living things in their descriptions of environment; however, the same studies also show that children do not see human as a part of environment (Littledyke, 2004; Loughland, Reid, & Petocz 2002; Shepardson et al., 2007; Yardımcı & Kılıç, 2010).

The findings of the present study show that the students' thoughts focus on clean environment (59.21%), polluted environment (25.43%) and both clean and polluted environments (5.36%). In a study by Alerby (2000) the students' drawings were grouped under the headings of clean environment, polluted environment and activities to be performed to keep the environment clean. Alerby reported that one of the two children from 7-10 age group and one of the three children from 13-16 age group drew a clean environment. Why the number of clean environment drawings is higher than the other drawings can be explained by the high number of students from young age group. In both studies, elements depicted in the drawings have similar characteristics. In the drawings produced in both studies, the students usually drew trees, while they drew healthy trees with leaves in their clean environment drawings; they drew trees with fallen leaves or dry trees in their polluted environment drawings. In both studies, the students depicted air pollution, land pollution, water pollution and distorted urbanization in their polluted environment drawings and among these problems, air pollution is the one most commonly emphasized. The children drew smokes coming from factories and cars to depict air pollution. This finding concurs with those reported by Sadık et al. (2009). In these three studies, air pollution is more emphasized than the other types of pollution. Yardımcı and Kılıç (2010) carried out a study with elementary school students and found that the students mostly emphasize pollutions resulting from rubbish and exhaust gases. When the environmental problems depicted in the drawings are examined, it can be easily said that these are mostly the problems that can be observed by the students in their surroundings. In none of the drawings pro-

duced within the context of the study, global environmental problems such as global warming and thinning of the ozone layer were depicted. Another finding of the present study is related to human figures found in the drawings. In all the themes, human figures were frequently used. In these drawings, humans were depicted polluting the environment or trying to clean the environment. This indicates that the children think that like other living things, humans are also affected from environmental pollution and at the same time, they are among the causes of environmental pollution.

When the students' grade levels are considered, the findings obtained revealed that with the increasing grade level; that is, with increasing age, the number of the students drawing clean environment decreases; yet, the number of the students drawing polluted environment increases. This result is parallel to the results reported by Alerby (2000), Barraza (1999) and Fleer (2002). In all three studies, it was observed that with increasing age, the students have more negative opinions about world/environment. This can be explained by the fact that with increasing age, the students' level of awareness of environmental problems rises and their concerns about these problems also increase. While young children mostly aware of the events taking place in their close surroundings, with increasing age, their awareness of global events starts to rise.

Children's daily experiences have important place in shaping their thoughts. Though the number of the codes found in the present study is high, the number of varieties in plant and animals species is limited and there is a lack of varieties in environmental problems, which indicates that the students have limited experiences about environmental problems. The purpose of environmental education at elementary level should be to create awareness of environment and environmental problems (Ayvaz, 1998). When the fact that solving environmental problems can be possible only through the efforts of humans is considered, it becomes quite clear that children's awareness of environment and environmental problems need to be raised. The studies revealed that field trips and activities carried out in nature facilitate children's understanding of the relationships between living and non-living things in nature and the effects of human activities on nature (Balantyne & Parker, 2002; Manzanal, Barreiro, & Jimenez, 1999). Learning settings provided for children about environmental issues should have the potential to impact children's environment-related expe-



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