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A study for determining the elementary school students' environmental knowledge and environmental attitude level

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Abstract

With this study, it was aimed to reveal the relationship between knowledge and attitudes of students at 5th and 8th grades in elementary school by deliberating indirect indicators showing the levels and awareness on environmental subjects; to determine the differences instigated from socio-demographic factors and to set a scientific-based database in this respect. The research was conducted by sampling 841 first and second level students at four elementary schools in Corlu in 2007–2008 academic years. 'Survey' method was used and "Environmental Knowledge Test and Environmental Attitude Scale" for 8th grade students, who are the 2nd sample group, was prepared. While preparing the questionnaire forms, the literature about environmental education was surveyed. The questionnaires were handed in and collected the same day. In order to determine the efficiency of education on environmental studies at elementary school; looking for answer of "Could environmental knowledge studied in the curriculum direct students on this matter?" and determining the students' knowledge levels and attitudes according to their social level and social preferences formed the main problem of this research.

Keywords: Environmental education, environmental knowledge, environmental attitude;

1. Introduction

It is seen that the tendency of accommodating the environment as a set of universal values has recently gained wide acceptance and the interest in environment has increased significantly in the last 20 years. This interest has particularly focused on two subjects at this day and time. The first one of them is 'how to increase the environmental consciousness and the interest in environment' and the second one is 'what could be accepted as environmental practices' (Chawla, 1992). When international literature is surveyed, it is seen that there is a substantial amount of studies on the basis of the importance of the tendency called "New Ecological Paradigm" for creating ecological awareness and its availability for environmental education by making contribution to sustainable development of countries (Yürek, 2007). The sense of environment, which has been identified with the name of new ecological paradigm, grounds on the relationships between human and environment. It is possible to summarise the base of this mentality as "human is part of nature, not apart from it". The solution is an environmental education, which keeps the human in the centre, not a human-based environmental mentality (Atasoy, 2005).

In discussions of research and education about environmental education, it is required to explain the concepts of "action" and "behaviour". All behaviours, which we consciously have, are ones of learning products (Jensen, 2002).

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Positive attitude towards environment includes the protection of environment and also individuals' positive opinions, feelings, and behaviours towards functions of living creatures in their lives (Türküm, 1998). So, the main purpose of education for environment is not only to have information about the environment but also to provide gaining attitudes and behaviours to develop and protect the environment and problem solving methods.

One of the primary purposes of this research is to determine whether there is a difference according to basic and demographic variables by determining the environmental knowledge and sensitivity levels, attitudes and active participation of elementary school students. In this paper, some findings obtained from 8th grade elementary school students are evaluated.

2. Material and Method

The study was conducted by sampling 841 students from 5th and 8th grades of four governmental elementary schools in Çorlu with the full-required permission. In this study, the method survey was used. With the organisation made by school administrations, students were informed about the survey. In the process of making questionnaire forms, the literature about environmental education was reviewed. In the selection of questions in order to compare results with different regions of Turkey, studies done in this field was used and the final form of the test was determined by taking views of class teachers. The study was assessed using statistical analysis methods. In additional, the study was performed in 2008 -2009 education year. The students of the 8th grades are 231 females' (55%) and 187 males (45%). This paper includes some findings of the 8th grade students.

In the scope of this research, a three-step questionnaire was prepared in order to determine individuals' state of readiness about Environmental Education by benefiting from scientific studies, articles, books, publications, papers, online resources, and elementary school course books about this subject in accordance with some experts' opinion. In the scope of questionnaires, "Demographic Questions" and "Environmental Knowledge Test" were conducted to the students. Also, a likert type "Attitude Scale" for separately testing environmental attitude was carried out. In respect of reliability of the scale, cronbach alpha of the scale is 0,81 and it is acceptable.

3. Results and Discussion

Average point for environmental knowledge of last grade students at second level of elementary school is 14,67 on the basis of 26 scores. According to likert scale and environmental attitude scale, it is determined that average point for environmental attitude of the students is 103,02 on the basis of 140 Scores. (Table 1). It is seen that almost half of the achievement test, in which environmental knowledge test i.e. environmental subjects are based on, was not answered correctly. It might be thought that this result is arisen from reasons such as that there isn't enough attention given to subjects about environment in lessons at elementary school, there are some mistakeable concepts on subjects about environment, the students cannot effectively understand and comprehend the environmental subjects because of different reasons, and also environmental unites in the program of elementary school are insufficient.

Findings about environmental knowledge level and environmental attitude scores of 8th grade elementary school students are shown in Table according to their genders. The environmental knowledge and attitude levels of female students are higher than males. There is a statistical difference between male students and female students in terms of environmental attitude scores ($p < 0.05$). Yet, there is no statistically significant difference between male and female students in terms of their environmental knowledge levels ($p > 0.05$). The relationship between gender and environmental attitudes were found as expected. This finding is not surprising when ideals and images exposing to the role of women are considered. The role of women includes similar characteristics in almost all countries. Women must be adaptable, obedient, calm, empathetic, affectionate, hot, sensitive, dependant, tolerant. It was started to convey this role expectation to a female child since her birth and nobody can completely avoid from the

formation according to this cultural expectation. In this regard, it is not expected that female students remain insensitive towards knowledge conveyed about environmental subjects.

Average scores for environmental knowledge and attitude of 8th grade elementary school students according to their parents' monthly income are shown in Table 2. As it is seen in Table 2, environmental knowledge levels of the students whose parents have 1000 -1400 \$ monthly income is higher than the students whose parents have different monthly income. Environmental attitudes of students whose parents have 700 –1000 \$ monthly income are higher than those of students whose parents have different monthly income. There is no statistically significant difference between environmental attitudes of 8th grade students in terms of monthly income ($p>0.05$).

Averages of environmental knowledge and attitude scores of 8th grade students according to number of family members living together are shown in Table 3. According to Table 3, environmental knowledge levels of students whose number of family members living together is 4 are higher than the level of students whose number of family members living together is more than four. Environmental attitudes of students whose number of family members living together is 7 are higher than the level of the other students. According to variance analysis, there is no statistical significant difference between environmental knowledge levels and attitudes of 8th grade students in terms of number of family members living together ($p>0.05$).

Averages of environmental knowledge and environmental attitude scores of 8th grade students according to educational status of their mother and father are shown in Table 4. It is seen in this table that environmental attitude scores of students whose mothers' educational status is university are higher than the other students' scores. There is a statistically significant difference between environmental knowledge levels of 8th grade students in terms of their mothers' educational status ($p<0.05$). Yet, there is a no significant difference between environmental attitude scores of the students in terms of their mothers' educational status ($p>0.05$).

According to data in Table 4, it is seen that environmental knowledge and attitude levels of students whose fathers' educational status is university are higher than those of other students. According to the variance analysis, there is no statistically significant difference between environmental attitude scores of 8th grade students in terms of their fathers' educational status. When the results are generally evaluated, it is thought that parents' having higher educational status make positive contributions to make child have environmental consciousness, gain environmental sensitivity and transform them into attitude and behaviour.

According to correlation statistic between environmental knowledge and attitude scores of 8th grade students, there is a significant difference 0,29 positive-directed between environmental knowledge and attitude levels ($p<0.05$). Correlation between environmental knowledge and attitude levels of 8th grade students shows a relationship at a low level. Positive-directed correlation shows that the more students have environmental knowledge level, the more they have environmental attitude or the less students have environmental knowledge, the less they have environmental attitude (Figure 1). Knowledge directly affects the interest and liking behaviour of an individual towards something, since people feel pleasure to do things, which they understand and comprehend. (Ramsey and Rickson, 1976). Therefore, the students' having knowledge on subjects about environment is subjected to a positive inner tendency, in other words the ability to develop positive attitudes (Aydın, 2000 and Özgüven, 2004). Even though correlation analysis of levels statistically shows low levels, it proves possibility to mention the presence of such a relationship.

When the results of the study are generally evaluated, it is observed that elementary school students in our country do not have enough levels in terms of both environmental knowledge and environmental sensitivity. Superficiality of ecological culture, love of nature, and environmental ethic might be shown as main reasons of the students' lack of environmental sensitivity. It is thought that generally studying lessons at school in a simple way with a method in which students are passive listeners and also teachers' having inadequate environmental education

at their higher education programs are important factors affecting the results of the study. Making the sense of environmental education gained to the students at all school levels is only possible by giving importance the education about it, and making the students gained the required knowledge, skills and sensitivity about this issue. Because of these reasons, education for environment must be dependent on an ecological basic, which sees the environment as a book and laboratory. Concerning with environmental education, youths must be helped in order to develop mental skills, which enable them to identify the environmental problems, to collect information about the subject, to give correct decisions in the light of this information, and to solve the environmental problems.

4. Tables

Table 1. T-Test Results Analysing Environmental Knowledge and Environmental Attitudes of 8th Grade Students According to Their Genders

	Gender	N	Mean	Std. deviation	t	Sd	p
Knowledge	Girl	231	14,98	3,88	1,655	416	0,099
	Boy	187	14,30	4,51			
Attitude	Girl	229	108,00	17,33	5,290	414	0,000*
	Boy	187	98,03	21,12			

*p<0.05

Table 2. Averages of Environmental Knowledge and Attitude Scores of 8th Grade Students According to Their Parents' Monthly Income

	Income Level	N	Mean	Std. Deviation
Knowledge	400-550 \$	76	14,36	4,09
	550-700 \$	96	14,63	3,72
	700-1000 \$	114	14,98	4,53
	1000-1400 \$	50	15,76	3,90
	1400 \$ and above	35	15,17	4,35
Attitude	400-550 \$	75	103,97	19,81
	550-700 \$	96	101,88	20,29
	700-1000 \$	114	106,29	18,70
	1000-1400 \$	50	105,16	20,62
	1400 \$ and above	35	104,74	13,19

Table 3. Averages of Environmental Knowledge and Attitude Scores of 8th Grade Students According to Number of Family Members Living Together

	Number of individuals	N	Mean	Std. Deviation
Knowledge	3 people	36	15,25	4,16
	4 people	155	15,34	4,22
	5 people	129	14,30	4,08
	6 people	54	13,89	3,97
	7 people	24	14,46	5,04
Attitude	3 people	36	105,78	17,59
	4 people	155	103,79	19,70
	5 people	127	104,47	20,12
	6 people	54	99,72	21,32
	7 people	24	107,42	17,88

Table 4. Averages of Environmental Knowledge and Environmental Attitude Scores of 8th Grade Students According to Educational Status of Their Mother and Father

	Mother education level	N	Mean	Std. deviation	Father education level	N	Mean	Std. deviation
Knowledge	Primary Edu.	233	14,63	4,20	Primary Edu.	176	14,55	4,17
	Element. Edu.	129	15,36	4,06	Element. Edu.	161	14,99	4,01
	University	17	15,24	3,21	University	46	15,35	4,72
Attitude	Primary Edu.	233	103,13	19,84	Primary Edu.	175	102,00	19,09
	Element. Edu.	128	104,59	20,35	Element. Edu.	161	105,83	19,57
	University	17	108,47	19,22	University	46	106,33	20,61

5. Figures

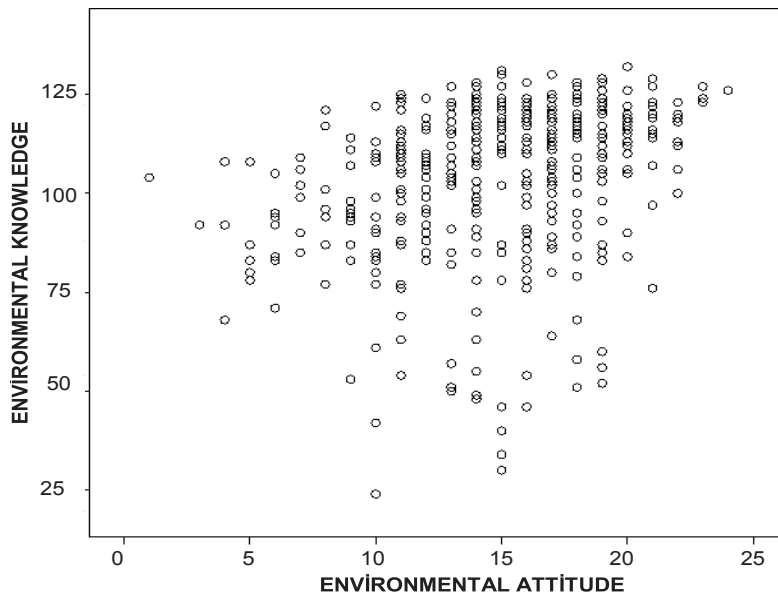


Figure 1- Correlation Graphic for Determining Whether There is a Significant Difference Between Environmental Knowledge Levels and Environmental Attitude Levels of 8th Grade Students.

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