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The investigation of eighth grade students' attitudes toward forest

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ABSTRACT

This study investigated the attitudes about forests of 8th grade primary school students in Burdur (Turkey) and to investigate demographic variables that might affect the attitude. "Attitude Towards Forest Scale" developed by Demirkaya and Genç (2006) was applied to 318 students who are instructed in 5 primary schools in Burdur. The purpose of this study is to research whether students' attitudes towards forest change in relation to demographic variables. According to the results of the research, a significant difference has been observed between students' attitude towards forest and distance of their home from a forest. A significant difference has been observed between students' attitude towards forest and frequency of forest visit. However, no significant difference has been observed in students' attitude towards forest in terms of gender.

Keywords: Primary school, forest, attitudes, values, behavior.

INTRODUCTION

Forests are important in many aspects. Forests provide various benefits to the environment, serve as natural habitat and shelter for animals, provide natural cultivation medium for timber trees and shrubs, serve as recreational and spiritual resting places for humans [1].

According to FAO (Food and Agriculture Organization), assessments have shown for many years that the area of the world's forests is diminishing. Estimates have become more reliable over repeated assessments, particularly with the recent agreement that FRA (Forest Resources Assessment) 2005 uses one definition for forest. According to current estimates [2], 0.38 percent of the world's forests were converted to other land uses (i.e. deforested) each year in the 1990s. At the same time, large areas were reverted to forest, leaving a net annual loss of 0.22 percent.

The total area of Turkey is 77,056,192 hectares and 26.9% of this area, an area of 20,743,122 hectares, is forests. A total of 54.4% of the forests in Turkey consist of needled (coniferous)

trees and 45,6% are of broad-leaved trees [3]. Only one third of these forests are yielding and the rest is in the state of low yielding, disrupted woods and coppices.

Turkish forests face serious problems. For example inappropriate management policies, forest fires, illegal lumbering and turning forest areas into construction and farmlands etc., sustainment of half of active population in Turkey with agriculture inevitably increase the pressure on forest flora and force the practice of agriculture on forest areas.

Environmental education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biophysical surroundings. Environmental education also entails practice in decision making and self-formulation of a code of behavior about issues concerning environmental quality [4]. Good environmental education, like any good education, must lead pupils and students out and on from their immediate perceptions and to experience a wider understanding. It must develop their capacity to go beyond the anecdotal and the particular. None of that happens by chance. A number of subjects and aspects of the school curriculum deal with matters related to the interplay between man and his environment [5].

Disruption or decrease of forests happens due to different reasons in different parts of the world. It happens sometimes by the hands of local people and sometimes despite local people's efforts against it [6].

Research on attitudes has been a long standing focus of sociology and psychology. In general terms, attitudes are measures of how people feel about issues. More specifically, an attitude can be defined as "an orientation toward certain objects or situations that is emotionally toned and relatively persistent. An attitude is learned and may be regarded as a more specific expression of a value or belief in that an attitude results from the application of a general value to concrete objects or situations" [7], [8].

McFarlane and Boxall investigated, Canada's Model Forest Program was established as a means of implementing concepts of sustainable forest management. A study was undertaken to examine forest values and attitudes toward forest management of campers and hunters in the Foothills Model Forest of Alberta within the context of a cognitive hierarchy model. Data were collected by mail survey in 1996. Campers and hunters were primarily biocentric in their forest values orientation. These groups supported protection-oriented management strategies, were not in favor of economic development and timber-oriented strategies, and did not believe that current management is sustainable. Socioeconomic factors, social influences, and knowledge had little influence on values or attitudes [9].

Values towards forest are related to upper degree cognitions such as specific attitudes that reflect forest management and policy priorities. For instance, the possibility of biocentric oriented individuals supporting conservation oriented management strategies is higher. The possibility of anthropocentric oriented individuals supporting traditional timber management is higher [10].

In natural resources management, level of knowledge based on reality has been defined as an external variable related to values and attitudes [11]. Despite knowledge has a certain affect on attitudes, there are various studies that suggest researching of the connection between them. Research shows that more knowledge about environment and environmental problems is more disposed towards private (polarized) environmental attitudes. Individuals with high level knowledge show more positive attitudes than individuals with low level knowledge [12].

Variables concerning forest values and attitudes can be affected by an antecedent factor including socio-economic variables and social affects. All socio-economic variables, women, people with high level education, younger individuals, urban residents, residents of non-timber dependent regions and a liberal political orientation have stronger biocentric values and support principles of sustainable forest management [13].

In addition to individual attitudes, values and attitudes can reflect social effects in individual's life and qualities of the society individual lives in [14]. Individuals who accept organizational philosophies based on participation in free social world and working in real environments can be subject to social norms that can affect their own values and attitudes. For instance, members of environmental organization are more biocentric oriented than non-members [15].

Attitudes may also act to create a cognitive structural base from which to identify new experiences. If a person has a positive experience with a tree, the attitude (e.g., "I like tree," or "trees are good") might be carried over to the next tree experience. Most importantly, attitudes are thought to be predictors of behavior [16].

Attitudes about the environment have been measured at different levels of specificity. Some studies have looked at broad environmental concern, while others have focused on specific components of concern for nature and the environment.

Learning students attitudes towards environment is an important step for environmental conservation. Information on students attitudes toward forests may be useful in helping guide the appropriate national forest conservation [17]. People start to think independently in adolescence [18]. Determination of pre- and recently adolescent students' attitudes towards forest is foreseen as a possibility to build a road map for the future of forest conservation and an important reference in shaping forest education studies.

Determination of attitudes of primary school students related to forest has an important place in environmental education. When determining attitudes related to forest, subjects such as utilization of forests, conservation of endangered species of trees, biological diversity, conservation of naturalness of forests and sustainability are emphasized. Determination of individuals' attitudes towards these problems will help the sustainability of our national forests. There are many studies in Turkey that analyzes general attitudes towards environment. However no study that analyzes attitudes towards forest was found. Therefore, it made sense to analyze eight grade primary school students' attitudes towards forest.

The purpose of this study is to measure the attitudes of eight grade students towards forest and analyze the factors that affect these attitudes.

MATERIALS AND METHODS

In this research survey method has been used. In the analysis of data obtained from students, t-test and One Way ANOVA method was used with SPSS 16.00 program. In inter-group significance test, α=.05 significance level has been used.

The Samples: Sampling group of this study consists of 8th grade students of 5 primary schools chosen by random sampling method in Burdur province in 2005 – 2006 spring semester. 350 students were reached in total and papers of 32 students (respondents) were eliminated due to

incorrect filling. 318 respondents that were included in the study were composed of 156 female (49.1%) and 162 male (50.9%) students.

The Questionnaire: Questionnaire was developed to collect information on student attitudes toward forest. Attitude surveys are one effective means of determining how people perceive the natural world and their degree of environmental concern [19]. The survey form developed by researchers was applied in determined schools in April 2006 by going there in person. Researchers have made necessary explanations on how to fill the survey after taking necessary permissions from school administration and then waited for students to fill the survey forms.

"Attitude Towards Forest Scale" was developed by Demirkaya and Genç [20]. Respondents rated a series of 36 statements on a 5-point scale ranging from "strongly disagree" to "strongly agree". The reliability coefficient of the Likert-type questions in the survey was calculated as 0.90 (Cronbach's Alpha). Demographic variables included gender, distance of house from forest, time spent in forest.

RESULTS AND DISCUSSION

This part reports the results and discussion of the survey. In addition to gender, the additional variables of the time spent in a forest and distance of their home from forest were analyzed.

Table 1. T-test results of attitude towards forest scale scores with respect to gender

Gender	N	Mean	Std. Deviation	df	t	Sig. (2-Tailed)
Female	156	135.2692	15.973110	316	636	, 525
Male	162	134.1728	14.77180			

Primary school students' attitude towards forest show no significant difference with respect to gender. However, female students' attitude towards forest ($\bar{x}$=135.2692) is more positive compared to male students ($\bar{x}$=134.1728). In this study, the effects of gender on the attitudes were consistent with previous studies. According to Frost [21], there was no significant difference between males and females for forest attitudes. But, females being slightly higher than males. The difference in gender may be culturally based.

Table 2. ANOVA Results of Students' Attitude Towards Forest Scale Scores in Regard to Distance of their Home from Forest

	Sum of Squares	df	Mean Square	F	Sig.	Sig. Difference
Between Groups	4666,900	3	1555,633	6,968	,000	0-5 km – 50-100 km; 5-10 km – 50-100 km
Within Groups	70106,484	314	223,269			
Total	74773,384	317				

*Scheffe * The mean difference is significant at the .05 level.*

Analysis results show a significant difference between total attitude towards forest scale scores in terms of distance of home from forest [$F_{(3-314)}$=6.968; p<.05].

In other words, students' attitudes towards forest changeable significantly with respect to distance of their home from forest. According to the results of Scheffe test done for the purpose of finding between which groups the differences between units are, attitudes of students who live

0-5 km far from forest ($\bar{x}$=135.72) and 5-10 km far from forest ($\bar{x}$=135.28) towards forest are more positive compared to students who live 50-100 km far ($\bar{x}$=96.0).

Frost [22], there was a significant positive relationship between self-reported time spent in a forest and attitudes.

The consistency may be a result of the compounding nature of variables: spending time in a forest is a behaviour that may change or develop attitudes, but the attitudes might also influence the decision to engage in this behaviour.

Table 3. ANOVA results of students' attitude towards forest scale scores with respect to time spent in forest

	Sum of Squares	df	Mean Square	F	Sig.	Sig. Difference
Between Groups	9166.808	5	1833.362	*8.719*	,000	3-5 times a week-never; Few times a month-few times a year and never
Within Groups	65606.576	312	210.277			
Total	74773.384	317				

*Scheffe * The mean difference is significant at the .05 level.*

Analysis results show a significant difference between total attitude towards forest scale points in terms of frequency of forest visits [$F_{(5\text{-}312)}$=8.719; p<.05]. In other words, students' attitudes towards forest vary significantly with respect to frequency of forest visits. According to the results of Scheffe test done for the purpose of finding between which groups the differences between units are, attitudes of students who visit forest 3-5 times a week ($\bar{x}$=140.71) are more positive compared to students who never visit forest ($\bar{x}$=125.17). Attitudes of students towards forest who visit forest few times a month ($\bar{x}$=140.78) and few times a year ($\bar{x}$=140.71) are more positive compared to students who never visit forest ($\bar{x}$=125.17).

CONCLUSION

In general the students have a positive attitude towards forest in the study group. Results obtained by comparison of environmental education in Turkey where forest destruction increases every day with international models show that the education is not adequate and at the desired level [23], [24], [25].

When primary school students' attitudes towards forest were analyzed in terms of distance of home from forest, a significant difference was seen between attitudes of students whose distance to forest are 0-5 km and 50-100; and 5-10 km and 50-100 km. Therefore it can be concluded that students who live closer to forest have more positive attitudes.

When primary school students' attitudes toward forest are analyzed in terms of time spent in forest, a significant difference was seen between students who visit forest 3-5 times a week and never; and those who visit few times a month and few times a year and never. As it can be seen in these results, there is a directly proportional relationship between time spent in forest and attitudes towards forest.

Decrease of natural forest areas also trigger global warming which ranks at the top of the ecological problems today. Plants produce their own food with photosynthesis by using carbon

dioxide in the atmosphere. Thus they prevent the surge of carbon dioxide amount in the atmosphere. It is assumed that the negative effects of global warming can be decreased by participation of students who understand the importance of forests for human life. At the same time, it is also assumed that increasing the ratio of forest areas by declaring one week every year as tree planting week can be an important solution.

Students must have awareness about why they should conserve forests. Only then they will believe why forests, plants of forests, animals and natural beauties should be conserved. They will understand the consequences of polluting and harming forests. Thus they will form the common knowledge of fundamental conservation awareness.

Leaving a livable world to the next generations by creating a nice environmental constitution and increasing development level of the country is an issue every sensible person should care about. This sensitivity can be achieved only by education. In this sense, environmental education will continue to be the main solution for prevention and solution of environmental problems. Environmental education should be practical and experience oriented rather than based on memorization and theory. One way of achieving this is preparing projects for them. Projects related to forests can be done individually but group work is also recommended. This way, students will learn actively by experiencing instead of just memorizing.

Gardner describes intellect as living in a changing world, adapting to the changes and the sum of talents and skills unique to every person. Many people can develop their intellect to a certain capacity as long as they receive adequate education. People who possess strong nature intellect which is one of intellectual fields defined by Gardner have the awareness of creating a healthy environment [26]. If this awareness is supported by education, it is assumed that societies consisting of individuals sensitive to importance of forests can be formed.

Positive attitudes towards forest have to be created in students by increasing their interest to forest and biological diversity in it with student trips to forests.

Instead of destroying forest and then trying to mend them, prevention of problems before they arise should be preferred. Restoring some values after they are lost is difficult. Mass communication media such as radio, television, newspaper, magazine have to be involved in matters such as announcing news about these issues, informing, contributing to formation of public opinion. Kellert [27], analyzed the content of newspaper articles as an indicator of public attitudes: “newspapers are generally oriented to local constituencies and thus can be relatively, good indicates of generally held views and interests. If judiciously selected, newspapers can reflect urban, rural, and regional attitudes.”

Environmental education should be given shape to provide people to accept responsibility to preserve the forest by bringing people environment-related knowledge, awareness, skills and values. Environmental education is not just an element of the learning process, an element of an individual's entire life cycle. Therefore, environmental education should be addressed and considered in the model of lifelong learning [28]. Using the mass (TV), group (field trip), and individual (pioneer farmer) educational–extension methods, respectively, in Turkey’s Forest is suggested [29].

An obvious limitation of this study is that it is representative of only one province center (Burdur). Replication of this study on a regional and national basis is clearly warranted.

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