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Effects of Using Case-Study Method in Social Studies on Students' Attitudes Towards Environment*

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Abstract

This study has aimed to inquired whether there was a significant difference between academic achievement and attitudes of 6th grade students who learned "The Resources of Our Country" unit of social studies through case studies and students who learned this unit with teaching based on existing unit. Besides it was aimed to present thoughts and feelings of the students about the case study method aided learning- teaching process. Pretest-posttest control group design was used in this study and 30 students selected as experimental group while 30 students formed the control group who were from 6th grade from a primary school in 2008-2009 teaching year. During the study, pre-achievement test and pre-attitude scale were applied to the experimental and control group initially and the implementation process was began after it. In this process it was determined that there weren't any significant difference groups in regards to pre-test and pre-attitude tests scores.

Key words: Case study, social studies, environmental, student attitude.

Introduction

Environment is sum of values which constitutes common asset of the human beings. Human beings are in an interaction with their environment as from the moment of their existence. This interaction aims to meet the requirements that necessary for their living. However, excessive consumption and misuse lead to deformation of the nature, which is capable of renewing itself. In this context, one of the most important current global issues is the environmental problem. Environmental issues gradually reach dimensions threatening the natural life and human life in Turkey as well. Unplanned urbanization, improper disposal of wastes, wasting the natural resources such as air, water, and soil, and lack of positive

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attitude towards these issues all speed up the process of disturbance of the natural balance. It can be understood that education aims to development of a positive attitude towards the environment at schools, i.e. the environmental education gains more and more importance, to enable elimination of the environmental issues and to develop permanent solutions for these issues. With the goal of growing citizens who are aware of their environmental responsibility, environmental education aims to teach children the environmental knowledge and to improve their awareness as from the 4th grade of the primary education (Adali, 2005, pp. 5-9).

Factors such as rapid population growth, unplanned urbanization, industrialization, production and excessive consumption lead to major environmental issues which are disturbing the ecologic balance. Today's world faces with many environmental issues such as global warming, ozone depletion, greenhouse effect, fertile soil lost due to erosion, extinction of animal and plant species, and forest fires. Environmental education has unquestionable importance in creating an environmental conscience, exhibiting this consciousness in behaviours, and informing people about impacts of their daily behaviours on the environment. Environmental education at schools is considerably important to enable all individuals to understand the environmental issues, to develop permanent solutions, and to foster environmentally-conscious individuals. Having realized this fact, many states prepared and started implementing environmental training programs from 1970s (Unal & Dimiski, 1999, pp. 142-154).

Particularly after the 1970s, concerns relating to the environmental issues led to commencement of international activities which were aimed to solving these issues. 1972 UN Conference on Human and Environment, 1982 UN Report on Our Common Future, and the 1992 Rio Conference were among such major international activities. The Tbilisi Declaration (1977) is considered a milestone in environmental education, because, this Declaration dealt with the details of the nature, goals and foundations of the environmental education on national and international levels. The categories about objectives of environmental educations are specified as awareness, knowledge, attitudes, skills and participation in the Tbilisi Declaration. Following this Declaration, all studies about environmental education have dealt with how to attain the objectives that specified in this Declaration. As a result of these developments, in Turkey, objectives of environmental education have been developed in such way to enable individuals to exhibit responsible behaviours and to help them to become citizens equipped with the supportive knowledge, skills and value judgments (State Planning Organization, 1996).

Current environmental issues' main result is peoples' values and life styles and, this situation has led to different definitions about environmental education that would influence and change these values and life styles. According to some people, the environmental education is a continuous process of learning, through which individuals become aware of their environment, and gain knowledge, skills, values and experiences aimed at solving the environmental issues for the future generations (Keles, 2007).

Environmental education has an unquestionable importance for individuals to get knowledge about their natural and human environment, to use them properly, and to transfer it to the future generations as a common heritage of humanity. An effective environmental education makes it obligatory to conduct in-school and out-of-school activities simultaneously (Hassan, Juahir, & Jamaludin, 2009) cause, theoretical education process within classrooms is not sufficient to draw attention to environmental issues and to develop solutions to these issues. Each individual's contribution to environmental

protection with their own behaviours, particularly as a consumer, requires active participation in the learning experience and taking active responsibilities, and it is emphasized that permanent learning about environmental issues is only possible through active participation of students in the environmental education (Bozkurt & Cansungu, 2002).

Environmental education has complementary objectives both in cognitive and affective areas. While the cognitive objectives try to make individuals literate, the affective objectives create values and attitudes regarding to the environment and environmental issues (Erdogan, 2007). Within this scope, environmental awareness, knowledge, attitude, skills, participation and consciousness constitute the components of the environmental education.

Importance of the environmental education rapidly increases in the changing world, and in education it emphasized more and more. However, it is not possible to say that it is sufficient currently (Alim, 2006). Even though efforts are put forth to develop positive attitude and behaviours through environmental education, it has not reached the expected level yet. Therefore, it is necessary to consider environmental education an indispensable part of formal and non-formal education, and to unify it with the curricula associated with all levels of education.

In new curriculums which were put into practise in 2004 issues about environmental education have distributed. Social studies course that taught from the 4th grade of the primary education is one of these courses. The social studies curriculum includes units, subjects and educational attainments which were aimed in environmental education from that grade. With the subjects included in the social studies curriculum relating to the environmental education, it is aimed to increase students' environmental knowledge, to create positive attitudes towards the environment, and to make students individuals protecting and improving the natural and human environment.

As in other disciplines, success in environmental education is directly proportional to correct selection of teaching-learning methods and techniques. As mentioned above, environmental education have reach to success when learning-teaching methods that require active participation and active responsibilities are used and students become environmentally aware individuals who are protecting and improving the environment. In this context, it is considered by researchers that the "Case-Study Method", which is one of the learning-teaching methods of the constructivist education system, can be effectively applied in the environmental education, and that extremely productive results can be achieved (Adali, 2005; Aydin, 2007; Bilen, 2002; Demirel, 2002; Kucukahmet, 2006) Because, the case-study method is used to o gain knowledge, skills and attitudes about specific issues and to help students to find rapid and effective solutions to such issues through analysis of problems encountered in the real life in connection with a specific subject of learning using the cause and effect relationship. In this context, the case-study method is one of the primary methods that can be effectively used in teaching environmental issues or environmental matters that have been experienced or likely to be experienced.

According to Sonmez (1994) and Tasdemir (2000), the case-based learning method is a method that brings the real life problems to the classroom environment. It is student-centred, and one of the most important benefits of this method is allowing students to develop their problem-solving skills, and to apply their knowledge in real cases. Students can suggest their opinions and develop recommendations for the aim of solving problems like they actually faced a real incident.

Changes are being and should be implemented in the field of environmental education as in many other fields for the aim of fostering modern, environmentally-conscious individuals

who are protecting and improving their environment. Because, environmental education is "a part of the daily life", even in one sense it is "the life itself". Using the case-based learning method is among these developments in environmental education. As one of the modern learning methods away from memorization, case-based learning is an effective method which was applied for the aim of developing solution proposals by establishing a cause and effect relation to a specific problem by involving them with the problems encountered in the daily lives. In this context, the purpose of this study is "Determination of the Effects of Using Case-Study Method in 6th Grade Social Studies on Students' Attitudes towards Environment"

Method

In this study the experimental model was applied due to the fact that it will compare the learning-teaching process supported with case-study learning method and the learning-teaching process based on the existing curriculum. The lessons for the experimental group were studied according to the case study method while the lessons for control group were studied according to the existing program.If a comparison is to be made between the two groups in a study, then the experimental method needs to be used (Karasar, 2000). The experimental model enables data that considering the cause and effect relationship under the control of the researcher for the purposes of obtaining data relating to the subject of the study (Yazicioglu & Erdogan, 2004). The experimental method is the one that enables most accurate results for the scientific researches as well. Because, the researcher performs a number of comparable processes, then examines the effects of these processes, and it is expected that researches conducted in this way lead the researchers to the accurate results and interpretation (Buyukozturk et al., 2008).

Sample

The target population of this study is composed of students attending to the 6th grade of Primary Education in the Fatih town of the Istanbul province, and the accessible population is composed of the 6th grade students attending to the Yunus Emre Primary School located in the Fatih town of the Istanbul province, and the sample is composed of the students attending the 6/C and 6/G classrooms of the Yunus Emre Primary School located in the Fatih town of the Istanbul province. Experimental group and control group of sample had been chosen by considering accessibility to the groups

Data Collection

The data collection tool of the environmental attitude scale developed by Uzun and Saglam (2006) as used to collect the data required for attainment of the purpose of this study. The coefficients of internal consistency attitude scale used in this study are Alpha value $\alpha = .866$, Guttman value S =.834, Spearman Brown value B=.750. According to these values, the internal consistency coefficient of the instrument is very high.

The environmental attitude scale was applied twice as pre-attitude scale and post-attitude scale to the experimental and control groups.

Analysis of Data

Data obtained from the environmental attitude scale were transferred to the computer environment and the frequencies were determined through statistical software, and they were interpreted by utilizing the relevant literature.

Findings

In this section of the study, the data obtained from the environmental attitude scale were presented in tabular form and interpreted.

Table 1.

t-Test Results of The Pre-Tests that Applied to Students Who Were in Experimental and Control Groups

Group	*n*	*X*	*SS*	*Sd*	*t*	*p*
Experimental	30	66.63	24.49	58	1.138	.891
Control	30	67.53	25.98			

It was determined that there isn't any statistically significant differences in terms of environmental attitude between two groups based on the "environmental attitude scale" that was applied to the experimental and control groups prior to the commencement of the application. As it can be seen in the Table 1, the average of the pre-attitude scores of the experimental group is 66.63, and of the control group is 67.53. Based on this finding, it can be said that that there is a small difference in favour of the control group in the results of the pre-attitude scale. However, the results of the independent groups t-test showed that the difference was not statistically significant ($t_{(58)}$=1.138; p>0.5). According to this finding, it can be said that the groups are equal in terms of the score received by them from the "environmental attitude scale".

As it can be seen in Table 2, the arithmetic mean of the post-attitude scores of the experimental group is 108,90, while it is 78,63 for the control group. These data show that the average of the post-attitude scores of the experimental group is higher than the scores of control group. This difference between two groups is statistically significant ($t_{(58)}$ =7.743, p<.01).

Table 2.

t-Test Results of The Post-Tests that Applied to Students Who Were in Experimental and Control Groups

Group	*n*	*X*	*SS*	*Sd*	*t*	*p*
Experimental	30	108.90	6.04	58	7.743	.000
Control	30	78.63	20.53			

These findings show that teaching supported with case-based learning method improves students' attitude towards the environment when we compared it to teaching based on the existing curriculum. It can be said that dealing with the environmental issues in case studies used in classroom is effective in achievement of this result. Because, the environmental attitude scores of the students belonging to the control group, in which environmental issues were not dealt with, are lower when we compared it to those scores of the experimental group.

Table 3.

Independent Sample t-test Results of The Pre-tests and Post-tests that Applied to Students Who were in Experimental Group.

Experimental Group	*n*	*X*	*SS*	*Sd*	*t*	*p*
Pre-Attitude	30	66.63	24.49	29	8.790	.000
Post-Attitude	30	108.90	6.04			

As it can be seen in the Table 3, the arithmetic means of the pre-attitude scores of the experimental group is 66,63, while it is 108,90 for the post-attitude scores of the same group. These data show that the arithmetic means of the post-attitude scores of the experimental group is quite high when we compared it to the arithmetic means of the pre-attitude scores. This difference between the arithmetic means of the pre-attitude and post-attitude scores of the experimental group is statistically significant ($t_{(29)}$=8.790; p<.01). According to this finding, it can be said that primary education supported with case-studies improves students' attitude towards the environment.

Table 4.
Independent Sample t-test Results of The Pre-tests and Post-tests that Applied to Students Who Were in Control Group

Control Group	*N*	*X*	*SS*	*Sd*	*t*	*p*
Pre-Attitude	30	67.53	25.98	29	1.704	.099
Post-Attitude	30	78.63	20.53			

As it can be seen in the Table 4, the arithmetic means of the pre-attitude scores of the control group is 67.53, while it is 78.63 for the post attitude scores of the same group. These data show that the arithmetic means of the post-attitude scores is higher than scores of the pre-attitude scores. However, this difference is not statistically significant ($t_{(29)}$=1.704; p>.05) according to the results of the t-test that applied to determine the difference. Based on this finding, we can say that teaching based on the existing curriculum does not have a significant effect on students' attitude towards the environment. The data presented in Table 2 also supports this result.

Table 5.
Pre-environmental Attitude point scores of experimental group students in the context of gender

Gender	*N*	*X*	*SS*	*Sd*	*t*	*P*
Female	17	66.17	24.44	29	2.587	.910
Male	13	67.23	25.53			

As it can be seen in the Table 5, the arithmetic means of the pre-attitude scores of the female students belonging to the experimental group is 66.17, and that of the male students is 67.23. These data show that the arithmetic means of the pre-attitude scores of the male students is higher than the scores of the female students. However, this difference is not statistically significant ($t_{(29)}$=2.587; p>.05) according to the results of the t-test that applied to determine the difference between the arithmetic averages of the male and female students. Based on this finding, it can be said that there isn't any difference between male and female students in the context of attitudes towards the environment prior to the application.

Table 6.
Post-environmental attitude point scores of experimental group students in the context of gender

Gender	*n*	*X*	*SS*	*Sd*	*t*	*p*
Female	17	108.41	6.73	29	.499	.622
Male	13	109.53	5.20			

As it can be seen in the Table 6, the arithmetic means of the post-attitude scores of the female students belonging to the experimental group is 108.41, and that of the male

students is 109.53. These data show that the arithmetic means of the post-attitude scores of the male students is higher than scores of the female students. However, this difference is not statistically significant ($t_{(29)}$=.499; p>.05) according to the results of the t-test applied to determine the difference between the arithmetic means of the post attitude scores of the male and female students. Based on this finding, it can be said that teaching supported with case studies has an effect in same level on male and female students' attitudes towards the course and the environment.

Discussion

In this study, it has been concluded that using case-based learning method in social studies course positively improves students' attitudes towards the environment.

Based on the results obtained from this study, it has been seen that teaching supported with case-based learning method positively influenced students' attitudes towards the environment. This finding of the study is consistent with the results of the studies conducted by Erten (2003), Ugur (2007), Horne and Thompson, (2008) and Çakır (2002). These studies, in which the experimental model was used, also concluded that the case-based learning method made positive contributions to students' attitudes towards the environment.

It can be said that the case-study method should be used effectively in learning-teaching processes to improve the environmental awareness of students, due to the fact that it has been determined as a result of this study and similar studies conducted with the experimental model that case-based learning method positively increases students' attitudes towards the environment in a statistically significant way. Thus, students can become more aware about the environmental issues. Furthermore, some objectives of the social studies course can be achieved more effectively and, objectives of this course also include improvement of environmental awareness of students towards the environmental issues.

When the literature is examined in terms of the case-study method, it is indicated that this method made contributions to development of students' emphatic, creative, critical, analytical and reflective thinking, problem-solving and decision-making skills and increased the responsibility, solidarity, participation, cooperation, respect, and value levels of students. This characteristic of the method is also supported by the results of studies conducted by Herreid (1994), Ugur (2007), Whitenack, Knipping, Coutts and Standifer (2000). Therefore, it can be stated that using case-study method in social studies course would make positive contributions to objectives of the course and, the skills and values which make contributions, are the focal concepts of the social studies course. In this context, the discussion can be concluded as follows:

The case-study method can be used to:

a) enable students to develop a positive attitude towards the environment in the Social Studies Course, and
b) increase students' levels of knowledge, values and skills by means of the Social Studies Course.

Because, both this study, and the other similar studies show that case-study method enables achievement of the aforementioned objectives.

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