

## The Effectiveness of Environmental Education Through Art: The Effects of Literary Genre on Environment-Related Affective Tendencies of Students

*Oğuz Özdemir*

Department of Science Education, Faculty of Education, Mugla University, 48000 Mugla, Turkey

**Abstract:** This study deals with the investigation of the effects of environmental education processes where literary genre is used, on the environment-related affective tendencies of students. The data in the study was collected through an environmental education program conducted on the basis of pre-test, post-test, control and experimental group design with sixth and seventh grade students of a primary school in Turkey in 2005-2006 school year. The data were analyzed with appropriate statistical tests from SPSS program package and it was found that positive and significant difference occurred in the environment-related affective tendencies of the experimental group with whom the environment education program supported with the literary genre was conducted when compared to those of the control group where no literary genre are included in the education program. While no significant difference between the natural environment-related affective tendencies of the male and female students was observed, more increase was seen in the environment-related affective tendencies of the seventh graders.

**Key words:** Education through art • literary genre and education • environmental education • affective education • natural environment-related affective tendency

### INTRODUCTION

Current environmental education processes implemented so far have not been able to equip the individual with adequate positive attitudes and behaviors towards the environment. Experiences and studies so far have shown that the environmental awareness increases with education processes to a certain extent, yet, not any remarkable changes can they cause in the environment-related attitudes and behaviors of students [1].

This shows that the students do sufficiently not reflect the gained knowledge on their behaviors. The main reason of this can be the fact that not enough opportunities are provided for the students to have the experiences which enable them to link their cognitive world with their affective world. This shows the importance of enriching environment education programs with equipments which can enrich the students' affective worlds.

As the art has the potential of stimulating the affective capacities of people, it is thought to be an effective tool to be drawn on for rendering environmental education more effective. The starting point of this study is the power of the art in general and literary genre in

particular, to stimulate affective arousal and to create a will to get to know the environment.

It seems to be appropriate to review shortly the discussions trying to explain the concept of art before dealing with the relation between art and education and the role of art in education.

The art-related discussions so far have been primarily led by two dimensions of art; irrationality and rationality [2]. However, the approach based on the isolation of these two sides of art from one another seems to be inadequate to explain the complex and multi-dimensional structure of art. In this sense, the concept of art has been tried to be explained with the focus on two different thinking activities of human as in the approach of Langer [3] as "discursive" and "presentative" or, in the communication theory of Moles [4] as "semantic" and "aesthetic" and according to Daucher and Seitz [5] as "conceptual" and "imaginary".

In the above-mentioned approaches, it is seen that the man is restricted with the conceptual and linear realization of the existing and its reality by means of cognition, on the other hand, through affective activities, which are the core of aesthetic activity, it can be possible for the man to reach a multi-dimensional and

multi-leveled comprehension with the rich opportunities of imaginary thinking. This proves that the art may have a power to stimulate the man's thinking and imaginary potentials.

Methodological approaches towards the use of art in education differs in their starting point being either "value" or "instrumental" aspects of the art and they are subsumed under two main headings as "education for art" and "education through art". Education through art, the starting point of this study is also conceptualized as "art in education", "integrated arts" and "interdisciplinary education" [6].

The pioneer of the education through art is Herbert Read. Read points out that in educational processes, within a comprehensive framework through many materials ranging from visual and plastic works of art to literary genre and poems, art can be effectively drawn on to train the senses in "aesthetic education" [7].

Educational effect of art has also been considered in context of the interaction between cognitive domain and affective domain.

In this respect, Götze [8] argues that the gap left by informative teaching processes in the area of "recognition" can only be filled with the works of art. Starting from this conception, Götze, clearly explains the dialectic relation between cognitive and affective activities as "all that matters is combining seeing (or sensing) and thinking and recognizing and knowing in a living interaction".

In a similar way, Bacanlı [9], explains the connection between knowing and sensing through an analogy in which knowing is resembled to "sphere" and sensing is resembled to "electric charge" generated by friction and so the interaction is like the one taking place between the sphere and electric charge as a result of the friction.

According to Sahasrabudhe [6], the art feeds both the cognitive and affective fields of the man so it affects the educational processes two dimensionally. In this context, while art is expanding the borders of man's intellectual capacities, on the one hand, it serves the function of a driving force helping the man to get to know his environment through his affective experiences, on the other hand.

However, the environmental education processes applied are restricted to a great extent with students understanding their environment through cognition.

Gurevitz [10] explains the problems caused by the environmental education mostly based on cognition as not sufficiently reflecting knowledge on behaviors, techno-centered perspective's becoming dominant and not getting students ready for complex and unclear

ecological processes. Rost [11], on the other hand, explains the problems generated by conventional environmental education basically based on cognition as not motivating students enough to behave well, not equipping them with original understanding of ethical value and not getting them ready to overcome the situations involving complex-decision making.

All these indicate the fact that environmental education basically based on cognitive learning is inadequate both equipping students with deep understanding and analyzing and developing positive behaviors. This proves the importance of students' knowing their environment affectively as well as cognitively.

In this respect, affective environmental education is defined as a process of students' getting to know their environment based on affective experiences in which they effectively get involved with their attitudes, beliefs and senses [10]. Gurevitz claims that students can get to know their environment most meaningfully through their affective experiences and also states that educational activities supported with art create distinct differences in students' getting to know their environment by contributing to their environment-related affective reactions and their empathy [10].

In that case, a form of art, literature can have positive influences on human beings' getting to know their environment affectively. Unlike other means of communication, educational effect of literature can be interpreted from two aspects of language which are; according to Zimmerman [12], "presentative" and "imaginary" communicational aspects of language and according to Richards [13] "referential" and "emotive" functions of language.

As such, unlike other devices serving the function of informing, literary genre exhibit their effects by building a bridge between the imaginary and comprehension worlds of an individual by means of the aesthetic experience they provide.

The idea of drawing on the literature for the affective development education of human beings is mostly based on romantic movements of 18<sup>th</sup> and 19<sup>th</sup> century literature. In this context, Carr [14], bases the role of art in general and literary genre in particular in individuals' getting to know their environment on the approach of Rousseau and his successors claiming that the nature is the source of moral and emotional renewal for individuals. Carr [15] starting from that point, argues that art, by playing an important role in the education and refinement of feelings, can help people acquire an understanding enabling them to develop sensitive, respectful and virtuous attitudes towards the nature.

Kavcar [16] explains the effect created by literature on people unlike the effects brought about by referential materials as follows “The value of literature in relation to education comes from its providing people with various samples of hearing, thinking and acting. A person can obtain the freedom of selecting the route suitable for himself only in such a rich environment”. According to Uygur [17] the literature exhibits its influence by opening all the emotional channels of a human being, that is, by providing an emotional training.

In fact, the studies conducted so far provide some evidence demonstrating the fact that the students recognizing their environment through affective experiences are more sensitive to their environment than those who recognize it through cognitive experiences [10, 18, 19, 21].

When the literature in this area is reviewed, it is seen that the studies concerning the environmental education mostly focus on environmental education programs and environmental education methods in terms of gaining environmental knowledge, attitude and behavior. Among these, those which are related to environmental knowledge, attitude and behavior; for example, are Ramsey and Hungerford [22]; Thompson and Gesteiger [23]; Weigel [24] and those related to environment education programs, for example, is Topaloğlu [25] and those investigating environmental education methods, for example are Attarian [24], Howe and Disinger [27], Shepard and Speelman [28]. When the studies found in the literature dealing with environmental education are reviewed, it is seen that the studies aiming to investigate the influence of art on environmental education, which is the purpose of present study, are rare.

As a result, it is seen that art may have some influences on both the emotional arousal of the people and expansion of cognitive opportunities. Therefore, it is clear that besides students’ cognitively recognizing their environment, their affective recognition through the experiences provided by works of art is very important.

This study aims to investigate the effects of environmental education integrated with literary genre on the affective tendencies of students towards environment.

For this purpose, the validity of the following hypotheses is investigated:

1. Positive and significant change occurs in the environment-related affective tendencies of the experimental group with whom the environment education program supported with the literary genre on environmental issues is conducted when compared to those of the control group where no

literary genre are included in the education program.

2. Positive and significant change, to the advantage of experimental group, is observed between the environment-related affective tendencies of the control and experimental groups

## MATERIALS AND METHODS

**Population and sample:** The study was conducted according to the pre-test, post-test experimental design with control group. The population of the study consists of all the 26 sixth and seventh grade students of Sinop Korucuk Primary School in Turkey. The students in the group selected as the sample of the study come from demographically low socio-economic class and live in the suburbs of the city.

Environmental issues are introduced in an independent unit at the last part of science curriculum of the seventh graders in the country where the study is conducted.

**Instruments:** The data were collected through the application of the scale which was developed by the researcher and used as pre-test and post-test at the beginning and end of the 8-week environmental education program.

In order to collect the data in the study following tasks were performed:

In another group equal to the sample group, students were required to write compositions about environmental issues; among these, the statements which can be involved in measurement scale were selected. In order to determine the suitability of the selected statements to the measurement scale, the opinions of the experts were sought and necessary corrections were done and consequently the draft scale including 20 items were developed.

Draft measurement scale was piloted in a similar group. In the light of the findings obtained from piloting, the reliability of the scale was consolidated by eliminating the items which are not discriminative. Cronbach Alpha reliability coefficient was found to be 0,71. Experts’ opinions were sought for the content validity of the items.

At the end of this procedure, final form of the scale was given by eliminating 8 undiscriminating items from the 20-item draft scale, so the resulting scale consisted of 12 items. These 12 items consist of Lickert-type statements that can provide some insights about the participants’ environment-related affective tendencies corresponding to “receiving”, “responding” and “valuing” levels of Bloom’s taxonomy [29].

**Application:** The study was conducted sequentially following these stages:

At the beginning of the study, control and experimental groups were determined by means random selection and then, the measurement scale was administered both control and experimental groups and they were found to be equal with regards to their affective tendencies (Table 2).

The environmental education program prepared by the researcher was conducted for eight weeks, one hour per week, with the students of both the control group and experimental group. In the first stage of the application, the basic topics of environmental educations such as structure of natural environment, conversion of the matter in the nature and energy flow, the influences of man on the nature, environmental problems and their solutions were studied in a mixed group consisting of the students of control and experimental groups. In the second stage of the application, only the members of experimental group were involved. At this stage, processes involving the interpretations of environmental messages in the selected short stories and poems were incorporated.

At the end of the study, the measurement scale administered as pre-test was administered as a post-test.

Imaginary look of the study model is as follows:

Impartiality	Group	Pre-test	Measurement	Post-test
R	G <sub>1</sub>	T <sub>1</sub>	D	T <sub>2</sub>
R	G <sub>2</sub>	T <sub>3</sub>		T <sub>4</sub>

**Data analysis:** The data were analyzed via appropriate statistical tests in SPSS program package: In this respect, both at the beginning and at the end of the study, to compare the environment-related affective tendency levels of the control group students and experimental group students “independent samples t-test” and throughout the application, in order to detect the differentiation in their environment-related affective tendencies, “paired-samples t-test” were used. Minimum and maximum values that can be obtained from the scale were determined to be 12-36.

**Findings:** The data obtained from the pre-test administered at the beginning of the application to the students of both the control group and the experimental group were analyzed with “independent samples t-test” and findings given in Table 2 were obtained.

Table 1: Distribution of the control and experimental groups according to number and gender

Group	F	M	Total
Control	8	5	13
Experimental	7	6	13

Table 2: T-test analysis results of the data obtained from the pre-test administered both to the control and experimental groups

Group	N	×	S	SD	t	p
Control	13	27,30	3,63	24	-0,59	,953
Experimental	13	27,38	2,95			

Table 3: Comparison of pre-test and post-test scores of control group

Measurement	N	×	S	SD	t	p
Pre-test	13	27,30	3,63	12	-1,124	,788
Post-test	13	29,23	4,69			

Table 4: Comparison of the pre-test and post-test scores of the experimental group

Measurement	N	×	S	SD	t	p
Pre-test	13	27,38	2,95	12	-6,739	,000
Post-test	13	32,69	2,56			

Table 5: T-test results of the post-test data of the environmental sensitivity of the control and experimental groups

Group	N	×	S	SD	t	p
Control	13	29,23	4,69	24	-2,334	,028
Experimental	13	32,63	2,56			

Table 6: Post-test environmental sensitivity scores of the participants according to their genders

Gender	N	×	S	SD	t	p
Female	16	30,37	4,88	24	-0,919	,367
Male	10	31,90	2,33			

Table 7: Post-test environmental sensitivity scores of the participants according to the class they attend

Class	N	×	S	SD	t	p
6. grade	13	28,84	4,61	24	-3,028	,006
7. grade	13	33,07	2,01			

According to the findings presented above, it is said that the environment-related affective tendencies of control and experimental group students are equal at the beginning of the application ( $p>0.05$ ). This shows that at the beginning of the study, the control group and experimental group are similar and at the same level with regards to environment-related affective tendencies.

The data obtained from the pre-test and post-test conducted with the control group were compared through “paired samples t-test” in order to determine the change occurred in students’ environment-related affective tendencies and following findings were obtained.

According to the findings presented above, it can be told that at the end of the application, positive changes took place in the environment-related tendencies of the control group. However, the level of the change is not found to be statistically significant ( $P>0.05$ ).

This time, the same statistical test was administered to the data obtained from the pre-test and post-test conducted with the experimental group to find the change taking place in the environment-related affective tendencies of the students in the experimental group and following findings were obtained.

As can be seen from the table above, the increase seen in the environment-related tendencies of the experimental group is statistically significant ( $p < 0.01$ ). This shows that the students getting environmental education integrated with literary genre have more positive and significant change in their environment-related tendencies than the ones trained through a traditional way. Moreover, the data obtained with post-test were analyzed via "independent samples t-test" in order to determine the level of significance between the changes seen in the environment-related tendencies of the students in control group and experimental group and following findings were obtained:

The statistical analyses conducted show that significant difference in favor of the experimental group was found between the post-test scores of the control group and experimental group with regards to their participants' environment-related affective tendencies ( $p < 0.05$ ).

This proves that the environment-related affective tendencies of the students subjected to environmental education integrated with literary genre changed in a more positive and significant way than those of who were exposed to traditional environmental education.

The data collected were analyzed through independent samples t-test in order to determine the effects of gender and their grade level (sixth or seventh grade) on the increase seen in the environment-related affective tendencies of the students and following findings were obtained.

According to the findings presented above, the difference between the environment-related affective tendencies of the male and the female was found to be statistically insignificant ( $p > 0.05$ ).

Finally, the effect of which class they attend on the change taking place in their environmental sensitivity was investigated and following findings were obtained.

In the light of these findings, it can be told that there is a significant difference to the advantage of seventh graders between the means of environment-related affective tendencies of two grades ( $p < 0.05$ ).

So, it can be told that when compared to that of sixth graders, significant increase was observed environmental

sensitivity of seventh graders. The difference observed between the two grades may result from the fact that higher graders are more mature than lower ones in terms of cognitive and affective development.

**Recommendations:** According to the findings obtained from this application, it can be said that all the hypotheses proposed turned out to be true. Hence, it can be concluded that the students educated through a program where literary genre were incorporated to environment education exhibited more positive and significant changes in their environment-related affective tendencies than those who were exposed to traditional environmental education program, accordingly, the environment education program where the literary genre are used affects students' environmental sensitivity in a more positive way. This proves the fact that the environmental education program supported with the works of art is more effective than traditional environmental training.

Therefore, it can be claimed that the students in the experimental group where literary genre dealing with environmental issues were studied experienced aesthetic arousal through this process. And it is understood that this arousal caused a more significant increase in the awareness level of the students in the experimental group, as a result of their interaction with the literary genre, of the environmental entities and the destruction to which they are subjected, in their reactions to the factors destroying the environment and converting them into behaviors than that of the control group.

The findings obtained from the study seem to be in line with the opinions expressed in the conceptual framework of the study about the effects of art in general and literary genre in particular on the affective domain of the individual. Moreover, the findings obtained are parallel to the findings obtained by Ozdemir [30] proving that short stories raise the environmental sensitivity among the students.

In this respect, it can be argued that as students subjected to a certain affective and cognitive education understand, by means of the messages given by the literary genre, the reasons underlying the environmental destruction, they can reach a further affective maturity of understanding the need for a better world.

This shows that while the students are passing through the experiences depicted in the literary genre, they put themselves in place of the living creatures, so they internalize the messages given there. Therefore,

in the quest of enriching the affective dimension of the environmental education, art in general and literary genre in particular can be drawn on.

The realization that works of art have some educational effects within the context of environmental sensitivity proves this educational saying “only what is loved is protected and only what is known is loved” [11]. Certainly, what is meant here is not the role of art as something reduced only to its pragmatic scale and quest of such a role. Although it seems to be impossible to reduce the functions of art to a pragmatic framework, it is possible to draw on the art’s power of influence on people in environmental education processes, without being too much didactic. In fact, the importance of the effective use of works of art that can trigger the affective arousal in educational processes is clearly demonstrated by the fact that the perception and comprehension abilities of the people are mostly enriched by their world of imagination [31]. On the other hand, it is emphasized that the effectiveness of environmental education depends on its focusing on the integration of content, belief and attitude [1].

This study is expected to contribute to the realization of the importance of affective education supported with the works of art which has not been adequately dealt with so far and so to bring a new perception of environmental education.

In the light of the findings of this study, following suggestions can be made in relation to formal environmental education.

1. Environmental education processes should be enriched with various works of art, particularly with literary genre, to trigger affective arousal among students. To do so, works of art and literary genre should be incorporated into the curriculum of the courses related to environmental training; and while realizing the teaching processes, affective education supported with these works should be included in these processes to the desired extent.
2. In other courses which are not directly related to environmental training, in compliance with interdisciplinary learning, more works of art and literary genre giving environmental messages should be included.
3. Environmental education should be provided for students in a coherent program starting from pre-school and continuing till the end of higher education by giving priority to affective learning.
4. In order to raise students’ affective awareness and their aesthetic taste, the environmental education processes should be enriched with out of school activities such as visits to museums and various art exhibitions.

## APPENDIX

Please put X for the option which best explains your opinion about the statement

	I agree	I partially agree	I disagree
1. I usually do not recognize the natural beauties around me			
2. I deeply feel sorry for the fishes stranded to the beach			
3. When I see people polluting the environment I feel uneasy and warn them			
4. When I go to picnic I feel disturbed due to litters around			
5. I usually do not recognize the litters around me			
6. I would like to live in a crowded city with tall skyscrapers			
7. I support the establishment of nuclear power plants			
8. I prefer recyclable packaging materials not to harm the environment			
9. I never leave the taps open and electric switches on at home			
10. I feel concerned about the visual pollution resulting from unplanned urbanization			
11. I feel concerned about the spread of cancer due to the leakage from the poisonous barrels in the region where I live			
12. The effects of the leakage from poisonous barrels are exaggerated			

## REFERENCES

1. Zimmermann, L.K., 1996. Affect and the environment: 15 years of research (1979-1993). J. Environ. Edu., 27: 41-44.
2. San, I., 2003. Sanat Eğitimi Kuramları. Ütopya Yayınları, 87, Ankara.
3. Langer, S.K., 1957. Problems of Art, the Philosophic Lectures, New York.
4. Moles, A., 1966. The Theory of Information and Aesthetic Perspection, Urbana, London.
5. Daucher, H. and R. Seitz, 1969. Didaktik der bildenden Kunst. Moderner Leitfaden für den Unterricht, München.
6. Sahasrabudhe, P., 2006. Design for learning through the arts. Intl. J. Edu. through Art, Vol: 2.
7. Read, H., 1953. Erziehung durch Kunst in: Handbuch der Kunst und Werkerziehung, 1. Cilt, 2. Baskı, Berlin.
8. Götze, K., 1966. Zeichnen und Formen in: Die Kunsterziehungsbewegung, H. Lorenzen (Derl.), Bad Heilbrunn.
9. Bacanlı, H., 2006. Duyuşsal Davranış Eğitimi. Nobel Yayınları No: 127, 3. Baskı, Ankara.
10. Gurevitz, R., 2000. Affective Approaches to Environmental Education: Going beyond the Imagined Worlds of Childhood?. Ethics, Place and Environment, 3: 253-268.
11. Rost, J., 2002. Umweltbildung für eine nachhaltige entwicklung: Was macht den unterschied? Zeitschrift für internationala Bildungsforschung und Entwicklungspaedagogik, ZEP, Nr. 1/2002.
12. Zimmermann, H.D., 2001. Yazınsal İletişim. Çeviren: Fatih Tepebaşı, Çizgi Kitabevi, İstanbul.
13. Moran, B., 1991. Edebiyat Kurumları ve Eleştiri. Genişletilmiş 8 Baskı, İstanbul: Cem Yayınevi, 1991:15-308.
14. Carr, D., 2004. Moral Values and the Arts in Environmental Education: Towards an Ethics of Aesthetic Appreciation. J. Philos. Edu., Vol: 38.
15. Carr, D., 2005. On the contribution of literature and the arts to the educational cultivation of moral virtue, feeling and emotion. J. Moral Edu., 34: 137-151.
16. Kavcar, C., 1994. Edebiyat ve Eğitim, Ankara Üniversitesi. Eğitim Bil. Fak. Yayınları, No: 171, Ankara.
17. Uygur, N., 1984. İnsan Açısından Edebiyat. Remzi Kitabevi, 3. Basım, İstanbul.
22. Ramsey, J.M. and H. Hungerford, 1989. The effects of issue investigation and action education on environmental behavior in seventh grade students. J. Environ. Edu., 17: 20-23.
23. Thompson, J.C., and E.L. Gasteiger, 1985. Environmental attitude survey of university students. J. Environ. Edu., 17: 13-22.
24. Weigel, R. and J. Weigel, 1978. Environmental concern: the development of a measure. Environ. Behavior, 10: 3-15.
25. Topaloğlu, D., 1999. Çevreye Yönelik Tutumlar ve Çevre Eğitimi. Yayımlanmamış Yüksek lisans tezi, Hacettepe Üniversitesi.
26. Attarian, A., 1996. Integrating values clarification into outdoor adventure programs and activities. J. Phy. Edu., 67: 41-44.
27. Howe, R. and J. Disinger, 1988. Teaching environmental education using the out-of school settings and sessa. ERIC/SMEAAC Environmental Education Digest, No: 1. Washington, DC: Office of Educational Research and Improvement (ERIC Document Reproduction Service No. ED 320 759).
28. Shepard, C. and L.R. Speelman, 1985. Affecting environmental attitudes through outdoor education. J. Environ. Edu., 20: 29-34.
29. Krathwohl, D.R., B.S. Bloom and B.B. Masia, 1964. Taxonomy of Educational Objectives-The Classification of Educational Goals-Handbook 2: Affective Domain. New York: Longman.
30. Özdemir, O., 2006. Yazınsal Bir Tür Olarak Öykü'nün Çevre Duyarlığına Etkisi ve Çevre Eğitimi Açısından Değerlendirilmesi. Eğitim Araştırmaları Dergisi Anı Yay. Sayı: 23: 159-167.
31. Morin, E., 2003. Geleceğin Eğitimi İçin Gerekli Yedi Bilgi. İstanbul Bilgi Üni. Yay.21, 1. Baskı, İstanbul.