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THE EVALUATION OF NATURE EDUCATION TRAINING

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Abstract

Within the scope of "Nature Education" project by TUBITAK Science Department, which aims to provide a wide ecology vision and teach the language of nature to young research assistants from different departments, master and doctorate students and scoutleader teachers; in July, five years time the Project of "Ecology-Based Nature Education around Göksu Valley and Delta" was carried out. 149 people participated in this program. In the research, qualitative and quantitative research methods are used together. A form consisting of 20 questionnaires and 3 open-ended questions was used and the obtained data was analyzed. Codes were created in the direction of the answers given to the open-ended questions, and the opinions of the participants were interpreted by associating the generated codes. As a result of this research, the participants' expectations of the nature education projects were met and achieved the result of leaving it with a vision of a wide ecology.

Keywords: nature education, training, participant expectations, expectations met

Significance Statement

The study is aimed to reveal the extent to which expectations of participants were met in relation to environmental awareness and environmental literacy by the nature education titled as "Göksu Valley and its Eco-based Nature Education Project in Delta" and implemented in cooperation with Mersin University and TUBITAK-Science and Society Department in July 2010-14. The answers were sought to these questions below:

1. To what extent do the nature education projects meet the expectations of the participants?
2. What is your reason for choosing and participating in the Göksu Nature Education project you participated in?
3. What are your expectations from the Göksu Nature Education project you participated in?
4. To what extend do you think the Göksu Nature Education project met your expectations?

1. Introduction

The birth development, and spread of environmental education correspond to the awakening of environmental degradation on Earth and the search for environmental protection. Significant steps have been taken to develop human resources that will support the sustainability of life on earth since the time of Roman Club's historic warnings and people's having consciousness about the necessity to draw the boundaries of economic growth and development by the nature's carrying capacity (Özdemir, 2016). The human consciousness is the story that really reaches (Oppermann, 2009). The individual started to question his existence, the society and the phenomenon of domination tried to be set up on nature, which led the the passage of enlightenment from the dogmatic way of thinking (Meydan, Bozyiğit, & Karakurt, 2012). The societal development, positive attainment of thought and the search for cause-effect connection in inter-factual relationships have also been the starting point of individual and social reactions. The human being who has the quality of being an individual and questioning started to realize the importance of having the consciousness of sustainable development, maintaining the balance of nature and protecting the nature itself. Raising awareness to protect nature converges national governments and international organizations on the idea of the universality of natural values, as a result certain

protection statues based on scientific criteria, have been arranged for this field (Mamedov, 1996).

The organizations, most of which are volunteer organizations have been arranging free lectures, programs, camping training, which are becoming increasingly popular. This is an important development that helps increase the environmental awareness of families, children, and other participants. The number of organizations which only give out-of-school education is increasing day by day. One of the most important of these activities is the project titled "Scientific Environmental Education in National Parks" initiated by TUBITAK in Termessos National Park in 1999. The number of national parks host nature education increased to four with the inclusion of Kaçkar Mountains National Park in 2000, Kazdağı National Park in 2003, and Cappadocia National Park in 2004 (Ozaner & Yalçın, 2001). This number has increased every year since 2005 and has reached 49 regions in 2010 by combining summer nature education with summer science schools. In 2014 it reached 50 in this way. The decrease in the following years is due to the change in the format of the projects. The format has been transformed from a more general 'nature education' approach to more specific and narrower science camps, targeting mostly the boarding region primary school students, younger age groups and disadvantaged groups as participants. Eco-based nature education projects are based on the fact that the natural and cultural values of the protected area and its surroundings are processed on the basis of participatory education with the contributions of university lecturers and other specialists.

The ever-increasing ecological deterioration is a global threat. It is known that even if measures can be taken in the fields of technology, law, politics and economics, problems can not be solved unless a sustainable society is established and significant changes are made in the lifestyles of the people all around the world (Kawashima, 1998). Developments in agriculture and medicine brought together population growth and consequent pressure on nature. This pressure revealed itself with the rapid population growth, technological developments, urbanization, especially unplanned urbanization, and accelerated the process of deterioration of natural balance. All these negative developments have caused people to take an action about this, individually or as an organization. In nature, which is a synthesis product, the processes related to different disciplines have been intertwined and interacted with each other, resulting in different ecosystems and different landscapes. For this reason, nature education has a multidisciplinary character in its content and environmental education takes place through the combination of "in-school" and "out-of-school" programs (Bogner, 1998; Carrier, 2009; Dresner, & Gill, 1994; Durmuş & Yapıcıoglu, 2015; Meydan *et al*., 2012; Ozaner, 2004). The organizations, most of which are volunteer organizations have been arranging free lectures, programs, camping trainings, which are becoming increasingly popular. This is an important development that helps increase the environmental awareness of families, children and other participants. The number of organizations which only give out-of-school education is increasing day by day. One of the most important of these activities is the project titled "Scientific Environmental Education in National Parks" initiated by TUBITAK in Termessos National Park in 1999. The number of national parks host nature education increased to four with the inclusion of Kaçkar Mountains National Park in 2000, Kazdağı National Park in 2003, and Cappadocia National Park in 2004 (Ozaner & Yalçın, 2001). This number has increased every year since 2005 and has reached 49 regions in 2010 by combining summer nature education with summer science schools. In 2014 it reached 50 in this way. The decrease in the following years is due to the change in the format of the projects. The format has been transformed from a more general 'nature education' approach to more specific and narrower science camps, targeting mostly the YIBO and PIO students, younger age groups and disadvantaged groups as participants. Eco-based nature education projects are based on the fact that the natural and cultural values of the protected area and its

surroundings are processed on the basis of participatory education with the contributions of university lecturers and other specialists.

Environmental education includes the processes of informing, awareness raising, warning, balancing, development, protection etc. and it aims to create behaviors in this way in humans. It is also aimed at recognizing and distinguishing values, attitudes and concepts related to the human biophysical and social environment (Gillett, Thomas, Skok, & McLaughin, 1991; Goucide, 2008; Güler, 2009; Meydan *et al*., 2012; Orr, 1990; Ozaner, 2004; Salamon, 2000). In environmental education, in addition to formal education in the classroom to create environmental literacy, non-formal education is also mentioned (La Belle, 1982). In some sources, out-of-class education and environmental education are considered synonymous (Ford, 1986; Powers, 2004; Siegel, 2007).

At the end of the program, the participants are aimed to develop a personal manner to look at the nature and read the nature, to be able to perceive the diversity, unity, originality in nature's shape-color and aesthetics and the balance in the nature. They are also aimed to pose questions that arouse their curiosity and interests (Hungerford, & Volk, 1990; Kruse, & Card, 2004; Marcinkowski, 2010; Meydan *et al*., 2012; Ozaner, 2003).

It is emphasized by many researchers that this type of nature education, although implemented in a limited time, has contributed to individual's becoming more independent, creative and critical thinker and the nature education allows individuals to learn about natural processes, to increase their susceptibility to nature, to be more sensitive and conscious towards nature (Demirsoy, 2004; Durmuş & Yapıcıoglu, 2015; Meydan *et al*., 2012; Ozaner, 2004; Palmberg & Kuru, 2000; Pauw, & Petegem, 2011; Payne, 2006; Shuman, & Ham, 1997; Yanık, 2006). Despite some positive developments in our country and in other countries, manmade destruction of nature continues rapidly. If we do not take action as soon as possible, there will not be a natural area to protect even an environmentally educated human army in the future (Külköylüoğlu, 2006).

With the review of the literature on ature, it is understood that there is a necessity to educate individuals with nature education to raise their consciousness about the environmental issues. (Erdoğan, 2011; Erentay & Erdoğan, 2009; Keleş, Uzun, & Varnacı Uzun, 2010; Kıyıcı Balkan, Yiğit Atabek, & Selcen, 2014; Ozaner, 2004). Environmental education activities should be based on experiential learning (Auer, 2008; Brookes, 2004; Goudie, 2008).

To realize this, an environmental project was implemented by researchers in the natural environment of the Göksu Valley and Delta, which has an effective history and culture, rich biological diversity and water resources. The participants were chosen from individuals who will have an important role in raising environmental literate individuals and they were given the opportunity to learn by doing and experiencing in the natural environment. It was aimed to provide the participants with basic knowledge, skills, attitudes, behaviors, and awareness about the environment and make them learn by having fun with nature education. The project was supported by TUBITAK.

In this study, it is aimed to reveal the extent to which the expectations of the participants were met in relation to environmental awareness and environmental literacy by the nature education titled as "Göksu Valley and its Eco-based Nature Education Project in Delta" and implemented in cooperation with Mersin University and TUBITAK-Science and Society Department in July 2010, 2011, 2012, 2013 and 2014.

In this respect, the answers were sought to these questions below:

1. To what extent do the nature education projects meet the expectations of the participants?
2. What is your reason for choosing and participating in the Göksu Nature Education project you participated in?

3. What are your expectations from the Göksu Nature Education project you participated in?

4. To what extend do you think the Göksu Nature Education project met your expectations?

2. Methodology

2.1. Research Design

In this study mixed method was utilized which includes both quantitative and qualitative analyses. A mixed method is a scientific approach in which the researcher collects both quantitative and qualitative data together in order to find a scientific probing answer and evaluates the findings together (Creswell, 2016). Qualitative and quantitative research methods have been used in this research which aims to investigate the extent to which the projects of nature education meet the expectations of the participants. Quantitative research methods came out of positivist thinking. This method claims that social reality consists of observable, measurable, and expressible phenomena. In quantitative research methods, the main goal is to produce knowledge that explains generalized causal relationships. On the other hand, it seems that the qualitative research method emerged as an interpreting approach in the social sciences rather than a cause-effect relationship. With the qualitative research it was aimed to obtain the in-depth information from the people who participated in the study (Saban & Ersoy, 2016; Tabachnick & Fidel, 2007; Yıldırım & Şimşek, 2005) and with quantitative research it was aimed to get the reliability and validity of the research by increasing the number of applications (Balcı, 2005; Karasar, 2006). Comparative studies are research models aimed at determining which variables influence the dependent variable and in what way (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2010). The questionnaire used in the study was prepared by the researcher and consisted of 20 questionnaires and 3 open ended questions.

2.2. Study Group

The study group is composed of 149 people who participated in the "Göksu Valley and Delta Ecology Based Nature Education" project implemented in July 2010, 2011, 2012, 2013 and 2014. The personal information of the participants is given in Table 1:

Table 1. *Demographic information of participants*

Variables		F (Frequency)	% (Percentage)
Gender	Female	72	48,32
	Male	77	51,68
Age	20-25	76	51
	26-30	43	28,85
	31-35	21	14,09
	35 and over	9	6,06

Professions	Teacher as Leader of Scout	23	15,43
	Res. Asis. Student of postgraduate	114	76,51
	Member of NGO	12	8,06
Branch/Area of specialization	Classroom teacher	33	22,14
	Science education	14	9,39
	Physics	8	5,36
	Chemistry	7	4,69
	Biology	9	6,04
	Geography	13	8,72
	Pre-school education	11	7,38
	Physical education and training	5	3,37
	Turkish/Turkish language and literatüre	11	7,38
	Vocational courses	13	8,72
	Philosophy Group	5	3,37
	History	5	3,37
	Mathematics	9	6,04
	English	6	4,03

2.3. Data Collection

In this research, the form including 20 questionnaires developed by the researcher and 3 open-ended questions was applied to 149 people who participated in "Göksu Nature Education" projects in 2010, 2011, 2012, 2013 and 2014. While the questionnaire was developed; Ecology-based nature education projects and publications related to environmental science, the project "Ecology-Based Nature Education in the Beysehir Lake National Park and Konya Surrounding" project conducted by Meydan was investigated and literature related to program development and evaluation was searched. In addition, field expert opinions were consulted for possible questionnaire items. The questionnaire, which was prepared as 25 questions at the beginning of the research, was applied to the study group and a reliability of the questionnaire was found to be 0.94 by using the Cronbach alpha formula. Thus, the questionnaire was finalized as 20 items.

2.4. Data Analysis

The frequency and percentage distributions of respondents' responses to the questions in the survey and their level of meeting the expectations of participants in the analysis and interpretation phases of the questionnaire were obtained with the "SPSS 20" statistical program and they were tried to be interpreted. Dependent t- test technique was applied to determine the difference between the participants' expectations from "Ecology-based Nature Education Projects" and their level of satisfaction (expectation-satisfaction level). In addition, descriptive analysis approach was used to analyze and interpret the data obtained from the open-ended questions in the research. Miles and Huberman (1994) interrater reliability formula "(reliability = number of agreements/(total number of agreements + disagreements)" was used to prove the reliability of the research. According to this formula, in order to obtain the reliability of the participants' views, who consist of 72 females and 77 males, it was found that the interrater reliability of the themes was ranged from %80.8 to %88.6. as the interrater reliability was calculated to be more than %80, it was concluded the themes of the study could be used. According to this approach, the obtained data is summarized and interpreted according to the previously determined subjects. Direct citation has often been given in order to reflect the views of the interviewed individuals in a striking way.

3. Findings and Discussion

This section includes findings and interpretations of the survey and interview results.

3.1. Findings related to the first sub-problem and interpretations

1. To what extent do the nature education projects meet the expectations of the participants? Table 2:

Table 2. *Expectations and the level of participants' satisfaction about their expectations*

Expectations	Expectation		Level of satisfaction		t	p
	$\overline{x}$	S	$\overline{x}$	S		
The project takes into account participants' wishes and recommendations	3.53	0.72	3.84	0.68	3.04	.002
Carrying out various activities related to social, cultural and educational activities in which the project is carried out	3.74	0.72	4.19	0.60	4.28	.000
The project is organized according to the interests and needs of participants from different disciplines	3.54	0.73	4.08	0.72	3.46	.001
Providing the project with sufficient activities related to the adaptation of the participants	3.78	0.64	4.15	0.65	3.42	.001
The project staff and the trainers are caring and close to the participants	3.79	0.77	4.49	0.63	6.99	.000
The project efficiently encourages the	3.81	0.64	4.39	0.66	5.19	.000

participants to join the activities						
The project has the ability to enhance the academic achievement of the participants	3.75	0.75	4.34	0.62	5.68	.000
Ensuring that participants are actively involved to improve the quality of the Project	3.59	0.70	4.17	0.77	3.36	.001
The ability of the project to discover and develop your interests and capabilities	3.18	0.71	3.89	0.69	1.09	.277
The project provides technological tools and materials that will help the project's teaching activities to be carried out successfully	3.78	0.74	4.40	0.58	7.29	.000
The project ensures sufficient opportunities for discussion, entertainment, leisure time activities for the participants	3.84	0.72	3.75	0.89	0.81	.422
The characteristics of the project that enhance participants' ability to research and develop projects	3.73	0.70	4.21	0.60	4.29	.000
Science is being offered with a popular language	3.73	0.68	4.33	0.71	5.83	.000
Ensure that participants can communicate with project staff and trainers during the Project	3.77	0.70	4.54	0.60	7.34	.000
Providing first aid services in case of possible injuries and accidents during the Project	3.82	0.74	4.45	0.66	7.03	.000
The project leads the participants to scientific, social and cultural activities in their environment	3.78	0.66	4.33	0.68	6.86	.000
The project is in constant self-development effort	3.77	0.70	4.44	0.68	7.06	.000
The project gives participants a sense of responsibility	3.73	0.77	4.47	0.52	8.06	.000
The project raises nature awareness and environmental awareness of the participants	3.89	0.69	4.71	0.47	10.4	.000
The ability of the project to radically change the way participants view and comprehend nature	3.86	0.75	4.64	0.55	8.85	.000

The dependent t-test technique was applied to relate the two variables (expectation-satisfaction level) in predicting the difference between the ecology-based nature education project participants' expectations and their level of satisfaction.

The t value at the level of expectation and satisfaction of the project "to take into account the participants' wishes and recommendations" was calculated as 3.04. According to this result, there is a significant difference between expectation ($\overline{X}$ = 3.53) and satisfaction level ($\overline{X}$ = 3.84) in favor of satisfaction level (p <0,05).

The t value at the level of expectation and satisfaction of "carrying out various social, cultural and educational activities in which the project is carried out" was calculated as 4.28. According to this result, there is a significant difference (p <0,05) in favor of the satisfaction level between expectation ($\overline{X}$ = 3.74) and satisfaction level ($\overline{X}$ = 4.19).

The t value at the level of expectation and satisfaction with respect to "the project is regulated according to the interests and needs of the participants from different disciplines" was calculated as 3.46 and as a result there is a significant difference (p <0,05) in favor of the satisfaction level between expectation ($\overline{X}$ = 3.54) and satisfaction level ($\overline{X}$ = 4.08).

The t value at the level of expectation and satisfaction about "the project provides enough activities related to the adaptation of the participants" was calculated as 3.42. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.78) and the satisfaction level ($\overline{X}$ = 4.15) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction that "the project staff and the trainers are caring and close to the participants" was calculated as 6.99. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.79) and the satisfaction level ($\overline{X}$ = 4.49) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction of " the project efficiently encourages the participants to join the activities " was calculated as 5,19. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.81) and the satisfaction level ($\overline{X}$ = 4.39) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction of "the project has the ability to enhance the academic achievement of the participants" was calculated as 5.68. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.75) and the satisfaction level ($\overline{X}$ = 4.34) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction of "ensuring that participants participate actively in order to improve the quality of the project" was calculated as 3.36. According to this result, there is a significant difference between expectation ($\overline{X}$ = 3.59) and satisfaction level ($\overline{X}$ = 4.17) in favor of satisfaction level (p <0,05).

The t value at the level of expectation and satisfaction of the project is "the ability of the project to discover and develop your interests and capabilities" was calculated as 1,09. According to this result, there is a significant difference between expectation ($\overline{X}$ = 3,18) and satisfaction level ($\overline{X}$ = 3.89) in favor of satisfaction level (p <0,05).

The t value at the level of expectation and satisfaction of "the project provides technological tools and materials that will help the project's teaching activities to be carried out successfully" was calculated as 7.29. According to this result, there is a significant difference (p <0,05) between the level of expectation ($\overline{X}$ = 3.78) and level of satisfaction ($\overline{X}$ = 4.40) in favor of satisfaction level.

The t value at the level of expectation and satisfaction of "the project ensures sufficient opportunities for discussion, entertainment, leisure time activities for the participants" was calculated as 0.81. According to this result, there is no difference between expectations ($\overline{X}$ = 3.84) and satisfaction level ($\overline{X}$ = 3.75) (p <0.05). When we look at the average, it is seen that the expectation level is high but the level of satisfaction is low.

The t value at the level of expectation and satisfaction with "the characteristics of the project that enhance participants' ability to research and develop projects " was calculated as 4.29. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.73) and the satisfaction level ($\overline{X}$ = 4.21) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction about "science is being offered with a popular language" was calculated as 5.83. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.73) and the satisfaction level ($\overline{X}$ = 4.33) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction about “ensuring participants’ communication with project staff and trainers during the project” was calculated as 7.34. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.77) and the satisfaction level ($\overline{X}$ = 4.54) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction with respect to "giving first aid services in case of possible injuries and accidents during the project" was calculated as 7.03. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.82) and the satisfaction level ($\overline{X}$ = 4.45) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction that "the project leads the participants to scientific, social and cultural activities in their environment" was calculated as 6.86. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.78) and the satisfaction level ($\overline{X}$ = 4.33) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction about "the project is in constant self-development effort" was calculated as 7.06. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.77) and the satisfaction level ($\overline{X}$ = 4.44) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction of "the project gives participants a sense of responsibility " was calculated as 8.06. According to this result, there is a significant difference between the expectation ($\overline{X}$ = 3.73) and the satisfaction level ($\overline{X}$ = 4.47) in favor of the level of satisfaction (p <0,05).

The t value at the level of expectation and satisfaction about "the project raises nature awareness and environmental awareness of the participants " was calculated as 10.41. According to this result, there is a significant difference between expectation ($\overline{X}$ = 3.89) and satisfaction level ($\overline{X}$ = 4.71) in favor of satisfaction level (p <0,05).

The t value at the level of expectation and satisfaction about " the ability of the project to radically change the way participants view and comprehend nature" was calculated as 8,85. According to this result, there is a significant difference between expectation ($\overline{X}$ = 3.86) and satisfaction level ($\overline{X}$ = 4.64) in favor of satisfaction level (p <0,05). The participants’ expectations and satisfaction level is given in Table 3:

Table 3. *The participants’ expectations and satisfaction level*

	N	$\overline{X}$	S	df	T	P
Expectation	185	75,5647	9,97192	148	8,391	,000
Satisfaction Level	185	86,3647	7,91600			

According to the results of the participants' expectation and level of satisfaction: the arithmetic mean at the expectation level was 75.56, the standard deviation was 9.97; the arithmetic mean at the satisfaction level was 86.36 and the standard deviation was 7.91. The t

value between the expectation and the satisfaction level was calculated as 8.39. There is a significant difference between expectation and satisfaction level at the level of significance of 0.05. We see that this difference is in favor of the satisfaction level. In this case, we can say that the projects are taking place above the participants' expectations.

3.2. Findings related to the second sub-problem and interpretations

The second research question is “What is your reason for choosing and participating in the Göksu Nature Education project you participated in?” Table 4:

Table 4. *Participants' reasons to choose and participate in Göksu Nature Education Project*

Answers	N
Getting to know the nature closely, learning by living	49
Self-improvement on curriculum issues	42
To gain awareness	28
I do like nature very much	28
Getting to know Göksu Valley and Delta more closely	19
Understanding the language of the nature and telling this to students	17
My desire to develop similar projects	11
Observing the effects of human on environment and environmental effects on human	9
Having benefit and advantage for my postgraduate education	21
Finding opportunities to practice theoretical knowledge in the field	9

When the Table 4 is examined, the responses are generally gathered under these statements: "getting to know nature well and learning by living", “self-improvements on curriculum subjects", "raising awareness", "having love of nature" and "providing benefits for postgraduate education".

Here are some examples from the participants' comments: one participant; "The necessity of observing the effects of natural occurrences and environment on human life, human being's effects on environment, developing academic knowledge through practical training" Another participant; "To share the knowledge of recognizing, understanding and protecting nature with my students who will be administrators in the future " Another participant; "With this education, I knew that I would be able to learn new information, fix my shortcomings, and see what I have never seen before, as the region has many geological formations and different ecosystems in it."

3.3. Findings related to the third sub-problem and interpretations

The third research question is “What are your expectations from the Göksu Nature Education project you participated in?”

Table 5. *Expectations of the participants from Göksu Nature Education Project*

Answers	N
To know the natural and cultural characteristics of the project area better	35
Introducing the project area through an interdisciplinary approach	29
To be able to improve myself about my branch	26
To do similar implementations in my region	19
To be nested with nature and gain awareness	17
To know the plant structure of the project area and their types	11
Being in activity-based implementations	10
Developing nature protection awareness through synergy created	9
Raising awareness about nature education and providing a vision	10

When we look at Table-5, it is seen that the view that the participants responded to this question in general is "to know the natural and cultural characteristics of the project area better", "to introduce the project area with an interdisciplinary approach", "to be able to improve myself about my branch ", "to do similar implementations in my region ", “to be nested with nature and gain awareness”. Here are some examples from the participants' comments: one participant; "I hope that the project will reach to wider masses, helping the recognition of the geography of our country and the effective and efficient use of natural resources." Another participant; "Getting to know the theoretical and practical knowledge about nature in the field of activities, getting to know the environmental problems on the spot, understanding the knowledge and approaches of expert people" Another participant; "With the nature education I have received, I think as a science and technology teacher, I will be able to give more concrete information to the students on the topics covered in the training content and to guide them better in their environmental-nature projects."

3.4. Findings related to the fourth sub-problem and interpretations

The fourth research question is “To what extend do you think the Göksu Nature Education project met your expectations?” Table 6:

Table 6. *Opinions of the participants about the extent to which Göksu Nature Education project met their expectations*

Answers	*N*
Completely and exceedingly	49
I learnt about the Göksu Valley and the Delta ecosystem	43
Learning outcome I got about nature and the environment	29
It was above my expectations	28
I think I started to understand the language of natüre	24
It was satisfying academically.	17
It could be a more relevant group	5

When we look at Table-6, respondents gave answers to this question in general by saying "Completely and exceedingly", "I learnt about the Göksu Valley and the Delta ecosystem", "Learning outcome I got about nature and environment". Here are some examples from the participants' comments: One participant; "I think I learned very good things about nature. It contributed too much to my development. Everything I learned here was the kind of information I could use in my professional life. Nature consciousness was adequately raised". Another participant; "It was a better education than I expected. The project team was very friendly and caring to us, the project team had a high quality; the education program was relevant and disciplined. " "Thanks to the positive communication between the participants, especially the project director, the intensive and exhausting training process has become one of the few examples of mutual self-sacrifice and unity. During the project, mutual dialogue and sharing with people with different professional discipline, different social and cultural characteristics, added people's unique talents to the project in group discipline and harmony, ensuring more than the goals of the project.

4. Conclusion and Suggestions

4.1. Conclusion

In this study, where we examined the level of satisfaction of the participants 'expectations in the context of the project "Göksu Valley and Delta Ecology Based Nature Education" within the context of ecology-based nature education projects, it was determined that participants' expectations were met in large scale. For this reason, eco-based environmental education is needed to protect nature and raise awareness. 15 years after the educational program changed in 1997 in Turkey, new primary and secondary curriculum development studies started in cooperation with TUBITAK and MEB in 2012. In this context, according to project outputs supported by TUBITAK; both academic publications and project outputs indicate that the benefits of nature education for sustainable development can not be denied and nature education was mentioned during the negotiations for European Union's acceptance of Turkey (Berberoğlu, 2015; Kıyıcı, Yiğit, & Selcen, 2014).

Participants explained why they chose Göksu Nature Education project with these statements: "getting to know nature well and learning by living", “self-improvements on curriculum subjects", "raising awareness", "having love of nature" and "providing benefits for postgraduate education". At the end of the education they declared that they have realized their aims.

According to the results of this study, despite the fact that the project activities were carried out within a period of ten days, it can be seen that positive attainments can be achieved in terms of environment consciousness, acquiring responsibility, developing, transferring acquired knowledge to future generations and acquiring scientific knowledge. Based on the results of the study, it can be said that environmental awareness, consciousness and environmental literacy levels of the participants are increased and the project has encouraged the participants to transfer these achievements to future generations. For this reason, it can be stated that the similar projects need to be realized and disseminated with academicians, teachers and different participants who will raise the next generation in order to achieve significant gains.

Participants Expectations from the Göksu Nature Education Project are "to know the natural and cultural characteristics of the project area better ", "to introduce the project area with an interdisciplinary approach", "to be able to improve myself about my branch ", "to do similar applications in my region" "And emphasized that the project meets these expectations. Participants stated that they were fulfilling expectations of the Göksu Nature Education Project and they gave the answers as "completely and exceedingly satisfied", "I

learnt about the Göksu Valley and the Delta ecosystem ", "learning outcome I got about nature and the environment".

Nature education means that the nature of the organism is, in general, a meaning as a whole. This concept can also be defined as the understanding and raising awareness of individuals via making various associations with nature. In addition, nature education helps individuals to raise awareness, get knowledge and understanding towards nature and natural problems, and nature education contributes to the development of positive attitudes toward environmental values (Meydan *et al*, 2012). It is difficult to achieve the desired output in environmental education with the existing school programs (Storksdieck, Ellenbogen, Heimlich, 2005). It has been seen that when participatory fieldwork is practiced, it is possible to develop responsible behaviors towards the environment, which is one of the main objectives of nature education (Erdoğan & Erentay, 2009) and having a sense of responsibility towards the environment (Peyton, Campa, Peyton, & Peyton, 1995; Yerkes & Haras, 1997). Individuals who have knowledge about different aspects of the environment, value the environment and have a sense of responsibility tend to take an active role in protecting the natural environment and resources (Dresner & Gill, 1994). When all these results are taken into account, it can be seen that the positive gains of the mentioned projects are undeniable. This situation shows the importance of the projects implemented within the scope of TUBITAK 4004 - Nature Education and Science Schools and new projects should be implemented. (Avcı *et al*., 2015; Erdoğan, 2011; Meydan *et al*., 2012; Tekbıyık *et al*., 2013).

The summer nature trainings supported by TUBITAK, organized by universities and non-governmental organizations, provide opportunities for students to practice on field trips and help to establish interrelationships between concepts and learning areas by improving their interdisciplinary outlook. It is important to increase the number of science and nature education programs over 50, implemented in 2014, in order to reach wider masses.

4.2. Suggestions

Based on the findings obtained in this study, the following suggestions can be made.

• Education and training programs on nature and environment should be made adequate in practice and awareness-raising should be essential.

• Ecology-based nature education projects should be disseminated, participation should be increased and participation of different occupational groups should be ensured.

• Individuals should be firstly aware of their natural environment.

• Individuals participating in the project should be encouraged to cooperate with different institutions and organizations and civil society organizations to make new projects.

•The participants should be directed to activities such as observation in nature and orientation to scientific research in order to get continual learning outcomes.

• In-service trainings can be arranged for teachers in order to prepare active learning environments and to learn by living with the students in line with the research results. Trainings can be given about project preparation for TUBITAK 4004 Nature Education and Science Schools program in order to spread such activities. Informing activities can be done to introduce the program to the personnel in the project units of National Education Directorate.

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