

An Investigation of University Students' Attitudes Toward Environmental Sustainability

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Abstract

The adoption of pro-environmental behavior is critical to reduce negative environmental impacts and move toward a more sustainable future. The role of higher education in training professionals to protect the environment for the future is important. The aim of the study was to investigate university students' attitudes toward environmental sustainability. In this descriptive study, 212 students studying child development and social work at the Faculty of Health Sciences at Kırıkkale University completed a questionnaire on demographic characteristics and the sustainable environmental attitude scale. Descriptive statistics (e.g., frequency and percentage distribution, arithmetic mean, standard deviation, etc.) and t-tests and an analysis of variance were employed to analyze the differences between groups. The mean for university students' attitudes toward environmental sustainability was $\bar{X} \pm SD = 3.28 \pm 0.26$. The results revealed that the students studying child development ($\bar{X} \pm SD = 3.31 \pm 0.23$) were more environmentally conscious than those studying social work ($\bar{X} \pm SD = 3.2 \pm 0.30$) and that knowledge and the level of awareness affected environmental consciousness. It appears that the greatest challenges faced are the rapid changes in knowledge about environmental issues. These changes need to be included in the curricula of universities.

Keywords: Environment, Sustainable Environment, Environmental Sustainability, University Students

1. Introduction

An environment is a medium in which people carry out their social, biological, and chemical activities (Daştan, 1999). At present, environmental issues, particularly the concept of sustainable environment, has become extremely important “ (Aktepe & Girgin, 2009).

The World Commission on Environment and Development (WCED) defined sustainability as “the living being able to make their own development without compromising the ability of the future generations to meet their needs.” Sustainability can only be achieved if the availability of natural resources, the inability to use them, and the irreversibility thereof are considered (Yaylalı, 2009).

The basic principles of sustainable development were identified in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro. Subsequently, in the struggle against environmental problems to provide a more sustainable, livable world, the United Nations institutionalized and universalized the purpose of establishing a sustainable world by declaring the period between 2005 and 2014 as “Education for Sustainable Development.” The basic vision behind education for sustainable development is to have a world in which all individuals have the opportunity to learn

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values, behaviors, and lifestyles that will ensure a sustainable future and positive social transformation (Tanriverdi, 2009).

According to Huckle (1993), in education for sustainability, students should be taught knowledge-based issues as well as an ethical approach to the environment that encourages them to be responsible for their behaviors. Education for sustainability aims to provide people with the attitudes, values, and behaviors necessary for individuals to protect local and global values (Summers, Kruger, Childs, & Mant, 2000)

It is of the utmost importance that universities develop environmental and sustainable environmental values. University students are expected to play active roles in their communities and professions after graduation; one of their key roles is to bring the knowledge, skills, attitudes, and values they acquired during their university educations to their professional and personal lives as well as their other environments. It is important to educate individuals who are passionate about environmental sustainability and who have made it a philosophy of life about the prevention of environmental problems. A literature review has revealed a paucity of studies on the views of university students toward environmental sustainability (Alpak, 2015; Bilim, 2012; Yıldız, 2011). Consequently, this study was conducted to determine the attitudes of university students toward environmental sustainability.

2. Methods

The participants completed a questionnaire that assessed their demographic characteristics. They then completed the sustainable environmental attitude scale. The latter includes 27 items and five dimensions (subscale factors) to determine participants' attitudes toward the environment. The five dimensions are concern for environmental problems; insensitivity to environmental problems; recycling for a sustainable environment; negative thinking about a sustainable environment; and importance of a sustainable environment. The 27 items on the scale were developed by Yıldız (2011), and they are assessed on a five-point Likert scale (1 = none; 5 = full). In some analyses, the items are scored inversely. The participants included 212 students studying child development or social work in the Faculty of Health Sciences at Kırıkkale University. In the study, t-tests and variance analysis were used because of the parametric test assumptions employed in descriptive statistics (e.g., frequency and percentage distribution, arithmetic mean, standard deviation etc.) and to determine the differences between groups. In addition, internal consistency (i.e., Cronbach's alpha) coefficients were calculated to determine the reliability of the scale and subscales.

3. Results

The distribution of the participants' demographic characteristics is presented in Table 1. Of the students, 61.8% were studying child development and 38.2% were studying social work; 48.1% and 51.9% of the students were in their first and second years of their programs, respectively; 75% were female students, while 72.2% were between 17 and 19 years of age.

Table 1: Distribution of students according to individual characteristics

Variables	Groups	n	%
Department	Child Development	131	61.8
	Social Work	81	38.2
Class	1st	102	48.1
	2nd	110	51.9
Gender	Female	159	75.0
	Male	53	25.0
Age	17–19	153	72.2
	20–25	59	27.8
Income	Sufficient income	41	19.3
	Income equal to expenses	127	59.9
	Insufficient income	44	20.8
Mother's level of education	Primary school and below	120	56.6
	Secondary school	43	20.3
	High school	36	17.0
	University	13	6.1
Father's level of education	Primary school and below	60	28.3
	Secondary school	51	24.1
	High school	58	27.4
	University	43	20.2
Number of siblings	None	5	2.4
	1	62	29.2
	2	69	32.5
	3	41	19.3
	4	35	16.6
Environmental education at university	Yes	52	24.5
	No	160	75.5
Membership for environmental organizations	Yes	4	1.9
	No	208	98.1
Ways to acquire environmental information	School	62	29.2
	Books	47	22.2
	Media	92	43.4
	Family	11	5.2
Perspective of the environment	I know and pay attention to the environment	183	86.3
	I know what to do and I do not pay attention	18	8.5
	I do not know this subject and I do not pay attention	11	5.2
TOTAL		212	100.0

The results also showed that 59.9% of the students' incomes equaled their expenditures. Furthermore, 23.1% of their mothers and 47.6% of their fathers had obtained at least a high school education. Of specific relevance, 75.5% of the students stated that they did not receive environmental education at their university, and 98.1% of them did not belong to any environmental organizations. Most of the students (43.4%) acquired environmental information from the media, and 86.3% of them were determined to pay

attention to the environment.

Reliability coefficients and the scale/subscale averages for the sustainable environmental attitude scale are presented in Table 2. The results revealed that Cronbach's alpha values for the scale/subscales were over 0.70% of the total. The mean value was =3,28. This value is above the median value (= 3) in the Likert interval of 5. Students are significantly more likely to be concerned about environmental problems (= 4.16) than those who have a positive opinion (= 4.04) on "recycling for a sustainable environment" and a high awareness on 25). However, the result for "insensitivity to the environment" was low (= 1.98) and that for "negative attitudes towards the sustainable environment" was moderate (= 2.99).

Table 2: Reliability coefficients and scale/subscale averages of the sustainable environmental attitude scale

Scale/subscale	Matter number	Cronbach's Alpha	\bar{X}	SS
Concerned about environmental problems	6	0.765	4.16	0.69
Insensitivity to the environment	4	0.837	1.98	0.72
Recycling for a sustainable environment	7	0.798	4.04	0.59
Negative thoughts about a sustainable environment	7	0.822	2.99	0.31
Importance of the sustainable environment	3	0.826	4.25	0.74
Total (Scale General)	27	0.879	3.28	0.26

Descriptive statistics on the sustainable environmental attitude scale are given in Table 3. As depicted in Table 3, the attitudes of the students toward the environment were positive: "I do not pay attention to the recycling emblem on the packaging of the products I bought" (31.7%); "I do not prefer to use a cloth bag, net, pouch paper instead of a bag" (25.4%) and (21.2%) "in terms of level of participation," negative "and" full "options were found to be higher than the other items.

Table 3: Descriptive statistics of sustainable environmental attitude scale

Variable	Level of participation					\bar{X}	SS
	Never (%)	Little (%)	Middle (%)	Very much (%)	Completely (%)		
1. I am excited about the idea of inventing vehicles that pollute the air to a minimum.	2.8	4.2	10.8	40.6	41.5	4.14	0.97
2. It scares me that the harmful gases left on the Earth can overcome the carrying capacity of nature.	3.8	3.3	6.6	43.9	42.5	4.18	0.97
3. I am afraid to know that the increasing pollution in the atmosphere is due to the global climate change.	2.4	3.3	6.1	43.4	44.8	4.25	0.89
4. I am concerned that one of the reasons for the future water shortage is the increase in the human population.	2.8	4.7	9.4	45.8	37.3	4.10	0.95
5. I prefer to use less polluting pesticides, industrial products and household cleaners to ensure continuity of the future generations.	1.9	2.4	10.8	45.3	39.6	4.18	0.86
6. The negative effect that the food chain of the chemical, which accumulates in the 6th, will cause in the other rings, is fascinating.	2.4	3.8	8.0	46.2	39.6	4.17	0.90
7. The loss of land in the other regions of the	49.5	35.4	6.6	6.1	2.4	1.76	0.98

world does not concern me.							
8. It is unnecessary to invest in renewable energy sources considering the future.	55.7	31.1	7.5	3.8	1.9	1.65	0.91
9. It is unnecessary to use these resources carefully to ensure the sustainability of energy resources.	58.0	29.7	6.1	4.2	1.9	1.62	0.92
10. It is unnecessary to use these resources carefully, considering that fossil energy sources can be exhausted for a day.	52.4	34.0	8.0	4.7	0.9	1.68	0.88
11. I am worried about the fact that nature cannot renew the resources we consume quickly.	1.4	1.9	7.5	53.8	35.4	4.20	0.77
12. I am happy to see recycling ads for the environment.	1.4	4.2	7.5	49.5	37.3	4.17	0.85
13. I do not pay attention to the recycling emblem on the packaging of my products.	13.2	23.1	32.5	25.5	5.7	2.87	1.11
14. I find it necessary to provide recycling training for children.	1.4	3.8	9.4	41.0	44.3	4.23	0.88
15. I prefer to use the products of the bottles where the process of dispensing is applied	2.4	12.3	32.1	36.3	17.0	3.53	0.99
16. I do not prefer to use cloth bags, mesh, pouch paper instead of bags.	21.2	29.7	23.6	19.3	6.1	2.59	1.19
17. I do not pay attention to the fact that the products I use are not disposable but reusable.	23.6	30.2	25.0	16.5	4.7	2.49	1.16
18. It is a sad situation to see the recycling boxes in the environment are as good as their capacity	1.4	2.8	9.0	39.6	47.2	4.28	0.85
19. It frightens me that increasing consumption is a major obstacle to the sustainability of the environment.	3.3	3.8	8.0	49.5	35.4	4.10	0.94
20. It is unnecessary to think that your future will be affected by this when we consume more than you can give us.	42.9	36.8	7.5	8.5	4.2	1.94	1.11
21. I am happy to attend the seminars on consumption habits for sustainability.	2.8	4.7	23.1	47.2	22.2	3.81	0.93
22. It is unnecessarily thought that the human population will be consumed as resources increase	36.8	38.7	11.3	9.9	3.3	2.04	1.09
23. It does not concern me that the increase in the human population hinders the sustainability of natural equilibrium.	44.3	39.6	6.1	8.0	1.9	1.83	0.99
24. Describing the curiosity and close surroundings of the learnings about the sustainability is a waste of time.	43.4	36.8	8.5	7.1	4.2	1.92	1.09
25. I wish my children will be a living philosophy of sustainability in order to leave a good environment.	2.8	2.4	5.7	46.7	42.5	4.24	0.88
26. I am happy that people will meet their raw material needs and reduce their oppression on nature with their recycling practices.	2.4	1.9	5.7	50.0	40.1	4.24	0.83
27. I find it important to tell people that the natural resources are not infinite with the recycling campaigns that are being implemented.	2.8	2.4	6.1	41.0	47.6	4.28	0.90

The students' attitudes toward the sustainable environment were also compared. The results of the t-tests and variance analysis for the groups' differences are presented in Table 4. The results revealed that the students studying child development (= 3.31) have

greater environmental consciousness than the students studying social work (= 3.22). The students who agreed with the statement “I know and pay attention to the environment” (= 3.30) were also found to be conscious of the environment.

Table 4: Comparison of students’ attitudes toward a sustainable environment

Variable	Group	\bar{X}	SS	t	P
Department	Child development	3.31	0.22	2.354	0.020*
	Social work	3.22	0.30		
Perspective to the environment	I know and pay attention to the environment	3.30	0.22	6.850	0.002*
	I know what to do and I do not pay attention	3.12	0.43		
	I do not know this subject and I do not pay attention	3.09	0.35		

* $P < 0.05$

4. Discussion

In this study, the level of university students’ attitudes toward environmental sustainability was determined. The students’ average for the sustainable environmental attitude scale was 3.28. This value was above the median value in the intervals of 5. Similar results have been obtained in literature on attitudes toward different sustainable neighborhoods (Alpak, 2015; Aydin & Ünalı, 2013; Gürbüz, Çakmak, Derman, 2013; Ruff & Olson, 2009; Şahin & Erkal, 2010; Tuncer, Sungur, Tekkaya, Ertepinar, 2005; Yıldız, 2011) Individuals who participated in the above-mentioned studies had positive attitudes toward the environment.

The results showed that students are more likely to be significantly concerned about environmental problems ($\bar{x} = 4.16$) than those who have positive opinions ($\bar{x} = 4.04$) about “recycling for sustainable environment” and “importance of the sustainable environment” ($\bar{x} = 4.25$). However, results showed that their “insensitivity to the environment” is low ($\bar{x} = 1.98$) and moderate ($\bar{x} = 2.99$) about “negative attitudes toward the sustainable environment.” Students are more concerned about environmental problems, and their more positive feedback on the importance of sustainable tourism can be explained by their awareness of the issue. Tuncer et al. (2005) also reported that students are concerned about environmental problems; this supports the findings of our study.

Of the students, 75.5% stated that they did not receive environmental education at their university, and 98.1% of them did not belong to any environmental organizations. One way of alleviating environmental problems is to provide effective education on the environment. The fact that most of the students had not been educated about the environment suggests that environmental education should be included in university curricula. Alpak (2015) stated that 28% of the science teachers who participated in a study enrolled in an environmental science course, but only 4.9% were members of an environmental organization.

Results revealed most of the students learned about the environment through the media (43.4%), and 86.3% responded positively to the statement “I know and pay attention to the environment.” Specifying the media as the source by which students are most informed suggests that the environment should be given more space in the media. In a

study conducted by Alpak (2015), most of those who indicated that they obtained information about the environment from the were science teacher candidates (49.8%). This result supports the findings of our study. While the items in the sustainable environmental attitude scale were found to be positively related to most of the students toward the environment, “I do not pay attention to the recycling emblem on the packaging of the products I bought” (31.7%), “I do not prefer to use a cloth bag, net, pouch paper instead of a bag” (29.7%) and (21.2%) “in terms of level of participation,” “never” and “little” options were found to be higher than the other items. To make these negative thoughts positive, sustainable environmental education should include conferences, panels, and similar activities. Activities can be designed, and environmental organizations can make individuals in particular aware of this issue through their work, especially through the media.

The results revealed that students studying child development have a more positive attitude toward a sustainable environment ($= 3.31$) than the whole group of students ($= 3.22$). Their responses to the statement “I know what I need to do and I pay attention” showed that they have a more positive ($= 3.30$) attitude. This reveals that environmental awareness is influenced by level of knowledge and awareness. In terms of environmental awareness, the expression “I know what I need to do and I pay attention” also indicated a positive attitude. The results also showed that those studying child development have a more positive attitude toward the environment than those studying social work. Studies have shown a statistically significant relationship between class level and attitude toward the environment (Çabuk & Karacaoğlu, 2003; Yıldırım et al., 2012). Çabuk and Karacaoğlu (2003) noted that rising fourth-grade students have higher levels of perception than students in other classes.

5. Conclusions and Recommendations

When the mean values for the sustainable environmental attitude scale are examined, it is calculated as the generalized scale $\bar{x} = 3.28$. This value is above the median value in the interval of 5.

- Students are significantly concerned about environmental concerns.
- The results revealed that the child development students ($\bar{x} \pm SD = 3.31 \pm 0.23$) were more environmentally conscious than the students studying social work ($\bar{x} \pm SD = 3.2 \pm 0.30$) Awareness affected environmental consciousness.

In line with these results, the following conclusions and recommendations can be made:

- Students are encouraged to prepare course schedules, conferences, and panels to raise awareness of sustainable environmental issues in the context of sustainable environmental education to make these ideas positive.
- Universities should conduct social activities focusing on the sustainable environment to eliminate differences in the attitudes of students who have different socio-demographic characteristics and to increase positive approaches.
- The media should play a role in making people aware of environmental sustainability.
- It would be advisable to repeat the study on larger samples and share the results.

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