Attitudes and Behavior of Ajman University of Science and Technology Students Towards the Environment in Light of Some Variables

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Abstract
This study examined the attitudes and behavior of Ajman University of Science and Technology (AUST) students towards the environment according to their gender and college. The sample consists of (375) students (230 males and 145 females) from different colleges. A survey investigated the attitudes and behavior scale towards the Environment (ABSTE) and environmental sciences course via an evaluation questionnaire. Results revealed wide differences in the environmental attitudes and environmental behaviors between the undergraduate students enrolled in environmental sciences course and others who didn't study the course yet. Findings also showed that females have higher environmental attitudes and environmental behaviors than males. According to colleges, students of Dentistry and Pharmacy colleges have the highest environmental attitudes and environmental behavior than students of Law and Information, Mass Communication and Humanities colleges. Engineering students have the least environmental attitudes and environmental behavior. The results generally assert the importance of environmental education in all educational stages, especially in university.

Keywords: Environmental Education, Attitudes, Behavior, University Students

Introduction

Environmental deterioration has emerged as a serious issue in the current world. Human factor is the largest contributor to the creation and exacerbation of many environmental problems that might advance into serious threats to the human being and all living organisms (Gore, 1993). These environmental problems may increase greatly, mainly due to some global negative activities or lack of environmental legislations in countries rather than an individual activity. Individuals with negative attitudes towards the environment will continue to pose problems regarding the environment (Uzun and Saglam, 2006). Only individuals who have environmental literacy, awareness and sensibility would contribute to the solution of these environmental problems.

Environmental Education (EE) has been viewed as an important approach to educate students about environmental issues, and to identify challenging environmental problems at all educational levels, including university (Fernandez et al., 2007; Tuncer et al., 2009). Therefore, Environmental Education is crucial to prepare environmentally literate graduate who would play an active role in protecting the environment by making informed decisions and taking environmental-friendly behaviors (UNESCO, 1980; Roth, 1992).

Environmental Education

The main aim of environmental education is to encourage citizens to act in an environmentally conscious manner that balances the current social, economic, and environmental needs without compromising those of the future (Yorek et al., 2010); as well as to defy and set goals at the cognitive, metacognitive, affective and behavioral levels (Sanera, 1998). Furthermore, to help people develop positive attitudes, emotions, thoughts or behaviors that increases their sensitivity towards the environment (Erten et al., 2003).

Therefore, many studies put forward the important outcomes of environmental education that, given in the different system of education (formal and informal), enables people to: 1) lead positive changes in their attitudes and behaviors towards the environment.2) protect and sustain the environment. Thus, it should be an essential part in all educational levels, as well as universities (Grodzinska J et al., 2006; Palmberg and Kuru, 2000).

Attitudes and Behaviors

It is assumed in social Psychology field that an individual's personal evaluations are more informative of the person's attitude than what she/he pretends to do (Eagly and Chaiken, 1993).Atkinson has defined attitudes as "favorable or unfavorable evaluations of/and reactions to objects, people, situations, or any other aspects of the world." They help us to predict and change people's behavior (Atkinson et al., 1996).

To be precise, "Attitude can also be considered as an "overall evaluation that expresses how much we like or dislike an object, issue, person or action" (Pride and Ferrell, 1991, Petty et al., 1999; Hoyer, 2001; Solomon, 2004).

Schultz and Zelezny (2000) pointed that the attitude of environmental concern originates from the individual's concept of ~~about~~ himself and from the degree of perceiving himself as a fundamental part of the natural environment. It is believed that behavior is what people do, whether it is appropriate for the environment or not (Hernandez and Monroe, 2000). In general, behavior is supported by knowledge and

attitude, but the direct connections between knowledge to attitude and to behavior does not always exist (Monroe et al., 2000).
Many studies confirmed that knowledge itself is not enough to change individuals' attitudes or even to motivate them to adapt a new behavior (Stern, 2000; Schultz, 2002), Although the lack of knowledge may represent an obstacle for behavioral changes (DeYoung, 2000; Schultz, 2002). That means, knowledge is not the only thing that affects individual environmental awareness, but there is also a combination of awareness, attitudes, and values; social, cultural and psychological. Newhouse (1990) confirmed also that the lack of knowledge about a certain aspect of life may be considered as a barrier for attitude change. Only attitudes, which are a derived from life experiences and education, can affect behavior. (Oweini and Houri, 2006).

Environmental Attitude, Environmental Behavior and Environmental Education
The educational and ecological literature contains various approaches in defining the environmental attitudes. It consist of attitudes, psychosocial variables, personal responsibility, and locus of control (Hines et al, 1986). Attitudes have been expressed as–common feelings towards the environment, being concerned about specific environmental issues, and taking action to reform environmental problems. While personal responsibility expresses the individual's feeling of obligation toward the environment, locus of control stands for individuals' understanding of their ability to bring about environmental change through personal behavior (Peer et al, 2007).Therefore, the individual characteristics that change according to external factors, will have little to no effect on the situation. Those that do change according to internal factors will have strong effect on the situation.

Internal locus of control describes people who believe in their ability to bring about change through personal procedures (Peyton and Miller 1980; Hungerford and Volk 1990).
One of the critical goals in establishing environmental literacy is to support people in believing in their ability to contribute in solving environmental problems through personal behavior, either as individuals or as a part of a group (Peer et al, 2007; Mondéjar-Jiménez, 2012). Consequently, environmental behavior can be defined as the action of an individual or a group that promotes the sustainable use of natural resources (Sivek and Hungerford, 1989).

Thus, students' attitudes affect their behavior, especially their choice of action, and their decisions. For instance, in schools, students who have high scientific knowledge tend to choose more convenient decisions (Ugulu, 2011). This means, there is direct relationship between environmental education and environmentally responsible attitudes and behaviors (Vlaardingerbroek and Taylor 2007).

Certain previous studies pointed that the correlation between cognitive and affective attributes is weak and non-linear (Myers et al, 2004). They also suggested that knowledge is not enough to change attitudes and adopt a responsible behavior.

On the other hand, many researchers found significant effects of environmental education on students' attitudes. (Bradley et al, 1999; Pooley and O'Connor, 2000; Sama, 2003; Maki et al, 2003; Yılmaz, Boone and Anderson, 2004; Alp 2005; Eroland Gezer, 2006; Uzunand Saglam 2006; Fernández-Manzanal et al, 2007; Aslan and Cansaran 2008; Ozsoy 2012). Some of them indicate that attitudes can be a

predictor of environmental behavior (Bamberg S, Moser G, 2000; Chewla L, 2006; Sivek D, 1988).

Various researchers found significant differences between males' and females' attitudes towards environmental problems and behavioral variations towards the environment. Females had a higher pro-environmental attitudes than males (Kuitunen Tynys, 2000; Talay et al, 2003; Sherkat Ellison ,2007 ;Fernández-Manzanal et al, 2007; Torgler et al, 2008; Ek Kılıç et al, 2009; Kose et al, 2011; Ozsoy, 2012)

Purpose of the Study

Provided the importance of a strong sense of positive attitudes towards the environment related to environmental behavior, the understanding and consciousness about environmental issues seem to be of particular importance in examining university students' attitudes and behaviors towards the environment. Therefore, the purpose of this study is to explore undergraduate students' attitudes and behaviors toward the environment. More specifically, this will be based on the main problem; and the research questions to be addressed in this study are as follows:-

1: What are undergraduate students' attitudes and behaviors towards the environment in Ajman University?
2: Are there any differences among undergraduate students' attitudes and behaviors in Ajman University towards the environment regarding their gender?
3: Are there any differences among undergraduate students' attitudes and behaviors in Ajman University towards the environment regarding their colleges?
4: Are there any differences between attitudes and behavior of undergraduate students enrolled in environmental sciences course and others who did not yet study environmental sciences course?
5: What is the students' evaluation of the course materials and their suggestions to improve it?

Importance of the Study

- Investigating factors that affect students to adopt positive attitudes and responsible behavior towards their environment.
- Studying students' attitudes and behaviors towards the environment may help in developing the course material and activities, as well as providing suggestions to protect the environment and explore solutions to the environmental problems.

Methods

Participants:-

This sample was taken from undergraduate students enrolled in Environmental Sciences course in the first semester for the academic year of (2014/2015). It consisted of (375) students 230 females (61.3%) and 145 males (38.7%). The sample included 180 students (49.4%) from (Law and Information, Mass communication and Humanities colleges) as one group of students who have a literacy background, 140 students (37.3%) from Engineering college, and 50 students (13.3%) from (Dentistry and Pharmacy colleges) as one group who have science background in Ajman University in UAE, Participants were volunteers in this study.

College	Female	Male	Total	Ratio %
Law &Sociology	110	75	185	49.4%
Engineering	90	50	140	37.3%
Dentistry& pharmacy	30	20	50	13.3%
Total	230	145	375	
Ratio	61.3%	38.7 %	100%	

Table 1: **Profile of participant**

Instrument

• *The Attitudes and Behavior scale towards the Environment (ABSTE)*: it was designed to determine students' attitudes and behavior towards the environment. The scale consists of (30) items put in two groups in 5-point Likert scale, that ranged from 1 (strongly agree) to 5 (strongly disagree). The two main factors of the scale are:

1.Students' Attitudes towards the Environment (SATE). (15 items-0.50%)

2.Student's Responsible Behavior towards the Environment (SRBTE). (15 items-0.50%)

• *Environmental sciences course evaluation questionnaire*: it was designed to evaluate students' opinions towards environmental sciences course, it consisted of (10) items in 5-point Likert scale, that ranged from 1 (strongly agree) to 5 (strongly disagree), and one open question about their suggestions to improve environmental sciences course.

Validation and Reliability of the Attitudes and Behavior scale towards the Environment Scale (ABSTE)

• **Validity:** The attitudes and behavior scale towards the environment was consisted of (38) items, it was subjected to content validity by submitting it to experts in psychology and experts in measurement and evaluation for their input and necessary corrections. According to their comments some items were deleted and some items have been modified, the remaining items are (30).

- Internal consistency validity has been determined by applying (ABSTE) on another sample consisted of (40) students and calculate r person between every item of the scale and the total score of the scale, the correlation coefficients were ranged between (0.59 and 0.77).

- Then calculate r person between every item and the total of its factor. The Correlation coefficients ranged between (0.67 and 0.89), all correlation coefficients were significant which confirmed the validity of the scale.

• **Reliability**: the attitude and behavior scale towards the environment (ABSTE) was subjected to Cronbach alpha reliability measure where the study was used. Student's attitudes towards the environment (SATE) was 0.77, Student's responsible behavior towards the environment (SRBTE) was 0.75, and Total of (ABSTE) was 0.78. These are satisfied reliability coefficient.

Result

	Highest points	mean	SD	RW	Order
Factor 1	75	55.8	6.94	77.39	1
Factor 2	75	49.65	8.15	66.34	2
Total scale	150	105.6	11.37	71.87	

Table 2: Mean, standard deviation and relative Wight for (ABSTE)

N	ITEM	Mean	SD	Relative weight	Descending order
	-Factor (1): Student's Attitudes towards the environment (SATE).				
5	Awareness of environmental problems contributes to countries' development.	4.42	0.75	88.49	1
4	The so-called ecological crisis facing humankind has been greatly exaggerated	4.40	0.70	88.00	2
3	Environmental problems have to be discussed in all the countries.	4.29	0.69	85.85	3
13	Media mast have role in spreading environmental awareness.	4.21	0.67	84.29	4
1	I concerned about problems affecting the current environment in the world	3.98	0.71	79.61	5
2	There are a little to be done about current environmental problems	3.90	0.69	79.10	6
14	I think that is essential to raise the awareness about the dangerous of environmental problem among all citizens	3.87	0.88	77.46	7
15	I think the recycling bins around the country are valuable.	3.85	0.99	77.20	8
12	I appreciate the efforts made to preserve and protect the environment	3.80	0.94	76.00	9
7	Environmental problems in the UAE is not critical.	3.50	1.06	75.33	10
8	Seminars and workshops regarding development of environmental awareness are useful	3.34	1.07	73.24	11
6	It's useless to warn people about environmental problems	3.12	1.06	72.10	12
9	I enjoy reading books and magazines on environmental issues	3.10	1.01	69.91	13
10	Knowledge about environmental problems in not my specialty.	2.99	1.14	68.10	14
11	I am bored by news related to environmental issues	2.97	1.10	66.23	15
	Total score of factor (1)	**3.72**	**1.65**	**77.39**	
N	**ITEM**	**Mean**	**SD**	**Relative weight**	**Descending order**
	- Factor (2): Student's Responsible Behavior towards the environment (SRBE)				
1	For saving energy, I turn off the light in my house when it is not used.	4.43	0.65	88.78	1
2	I willingly join activities to help save the environment.	4.36	0.70	88.00	2
6	I don't consume long time while I'm showering	4.21	0.79	86.24	3
7	I don't waste much water while I'm brushing my teeth	4.17	0.79	84.78	4
15	I've always reused the white paper in old notebook.	3.59	0.86	77.86	5
11	I always put any old staff (clothes, shoes…etc.) in recycling bins.	3.55	0.89	73.11	6
8	I buy only as much as needed while I'm shopping	3.41	1.03	71.02	7
5	I always watch T.V program about environmental problems.	3.38	0.91	68.50	8
4	I always talk with people around me about environmental matters.	3.34	0.96	67.57	9
13	I share links relevant environment and environmental awareness on social networks (Facebook / twitter, link in,…)	3.01	1.12	66.72	10
3	I avoid buying products in aerosol containers	2.91	1.14	52.39	11
14	I read labels on products to see if the contents are environmentally safe	2.40	1.03	47.34	12
10	I feel happy when I see people recycle used bottles, cans and papers	2.39	1.00	43.56	13
12	My friends know me as sensible person towards environment	2.30	1.34	40.25	14
9	I prefer using environmental harmless products	2.24	1.42	38.93	15
	Total score of factor (2)	**3.31**	**1.74**	**66.34**	
	Total of the scale	**3.52**	**1.15**	**71.87**	

Table 3: Means, standard deviations and relative weight of the sample Respondents' scores of Attitudes and behavior scale towards the environment

To answer the questions, and investigate the attitudes and behavior of undergraduate students enrolled in environmental sciences course towards the environment, we considered (3) is the midpoint, which means item indicates positive if it gets score 3 or above.

As seen in table (3) the undergraduate students indicated somewhat positive attitudes and behaviors toward the environment in the total scale, the total mean of scale was (3.52) with SD (1.15) and RW (71.87). For factor (1) student's attitudes towards the environment total mean was (3.72) with SD (1.65) RW (77.39). For factor (2) Student's Environmentally Responsible Behavior (SERB), the total mean of the scale was (3.31) with SD (1.75) and RW (66.34).

In factor (1): Student's attitudes towards the environment

As seen in table (3), students scored the three relatively highest in item 5 (M=4.42), which is "Awareness of environmental problems contributing to countries' development", then item 4 (M=4.40) which is "The so-called ecological crisis facing humankind has been greatly exaggerated", then item 3 (M=4.29) which is "Environmental problems have to be discussed in all countries". In these items, students showed their understanding about the importance of environmental awareness and its effect on countries' development and how the ecological crisis is threatening the humankind, and as a result students think that it is essential to discuss environmental problems among all countries together - not in separate. The lowest item was item 11 "I am bored by news related to environmental issues" (M=2.96).

In factor (2): Student's Responsible Behavior towards the environment

We can see that students scored the three relatively higher in item 1 (M=4.43), which is "For saving energy, I turn off the light in my house when it is not used", then item 2 (M=4.36) which is "I willingly join activities to help in saving the environment.", then item 6 (M=4.21) which is "I don't consume long time while I'm showering". In these items students translate their environmental awareness in many practical reactions and responsible environmental behaviors for saving environmental recourses like water and energy. The lowest item was item 9 "I prefer using environmental harmless products" (M=2.24).

		N	M	SD
Gender	Female	230	83.95	18.20
	Male	145	49.57	14.25
college type	Law & Information ,mass communication and Humanities	185	73.12	23.18
	Engineering	140	54.05	18.01
	(dentistry& pharmacy)	50	83.39	8.98

Table 4: Descriptive statistics of the sample

In order to investigate if there any difference in students' attitudes and behaviors towards the environment according to their gender or college. A two-way Analysis of Variance (ANOVA) was conducted on the attitudes and behaviors towards the environment Scale (ABTES).

Source	Df	Means square	F	P
Gender	1	26469.112	147.208	0.000
college type	2	9205.579	50.835	0.000
College* gender	2	9967.041	56.412	0.000
Error	370			
Corrected total	373			

Table 5: Results of two-way ANOVA on the (ABTE) scale

According to table (5) there is a significant mean difference between females and males in their attitudes and behaviors toward the environment. It was found that females have higher positive attitude and behavior towards the environment than males.
Consider that to main effect of students' college, a statistically significant mean difference were found amongst (Law and Information, Mass communication and humanities) colleges, (Dentistry and Pharmacy) and (Engineering) colleges on the student's attitude and behaviors towards the environment Scale [F=50.835, p=0.000].

The Scheffe post-hoctests were conducted to determine the mean score differences between groups. The comparison of mean scores according to the college type indicates that (dentistry & pharmacy) students expressed more positive attitudes and behaviors toward the environment than both (law and Information, Mass communication and humanities) colleges and (Engineering college). However, Law and Information, Mass communication and humanities colleges' students showed more positive attitudes and behaviors than engineering students. The result shows also that females in (Law and Information, Mass communication and humanities) have the highest score in the attitude and behaviors scale towards the environment than other colleges while males in (dentistry & pharmacy) have highest score in the (ABSTE).

In order to investigate if there are any differences in attitudes and behaviors towards the environment between undergraduate students enrolled in environmental sciences course and others who did not study the course yet. A group of 120 students (32%) has been taken from the main sample (375), and another group with 120 students (32%) who did not yet studied environmental course was taken randomly. T-test was determined for independent samples for the two groups.

	N	M	SD	df	T	p
Group(1)	120	113.7	6.78	238	28.12	0.001
Group (2)	120	84.3	9.23			

Table 6: Difference between students enrolled in Environmental course and others who didn't study the course yet

According to table (6) there is a significant mean difference in the attitudes and behaviors towards the environment between group (1) - the undergraduate students enrolled in environmental sciences course, and group (2) - students who did study the course yet in their attitudes and behaviors towards the environment for group (1) [t(238)=28.12,p=0.001]

In order to investigate what the students' evaluation of the course materials and their suggestions to improve it. Environmental sciences course evaluation questionnaire was applied.

N	Item	M	SD	RW	order
1	Environmental sciences course is somewhat difficult.	3.56	1.72	73.21	5
2	If the environmental courses was not required course, I think will choose it to study.	2.61	1.46	66.11	8
3	Environmental sciences course is an important course for students in science major (medicine - pharmacy …….)	2.43	0.99	65.53	9
4	Environmental sciences course provide very important information about environmental issues.	3.93	0.98	85.46	1
5	Environmental sciences course is only necessary for passing examination.	2.41	1.33	64.38	10
6	After studying environmental sciences course ,I feel responsibility towards the environment	3.82	1.31	79.45	3
7	Environmental sciences course made me think to find solutions for environmental problems	3.78	1.47	75.17	4
8	The course content successfully covered all environmental issues in very simple way.	2.98	1.12	68.62	7
9	Environmental sciences course need more practical activities	3.87	1.03	83.22	2
10	Feeling satisfied of studying Environmental sciences course	3.33	0.89	69.44	6
		3.27	**2.09**	**73.06**	

Table7: Mean, standard deviations and relative weight of respondents' Scores on the environmental sciences course evaluation questionnaire:

According to table (7) undergraduate students indicated somewhat positive attitudes towards environmental course, the total mean of questionnaire was (M=3.27) with (SD) =2.09 and (RW) =73.06. And regarding the open question about students' suggestions to improve the course, they proposed many suggestions like:

1. Environmental sciences classes should not exceed 30-40 students. That gives students chances to be more involved in class activities (discussion–presentation–projects).
2. Environmental sciences course material should be updated and focused on some current critical environmental problems that treat humankinds like (climate change–nuclear problems) and mention some practical solutions that students can do to share in saving the environment.
3. Environmental course materials contained much information, so they should be divided into two parts information to know and information to exam in.
4. Environmental course materials should be presented in interesting way with more practical and interactive work.
5. Environmental sciences course must have practical activities to make students more involved in environmental issues like:

- Trips to (Planetarium - Masder city - Desalination factories – Groundwater wells - Solar power plants).
- Visits to organizations working in environmental field (Abu Dhabi Authority for Environment - ministry of environment …etc).
- Invite organizations working in environmental industries to held some activities in Ajman University like (workshops, seminars, training, lectures and competition) to make students more care and aware about their environment.

Discussion

According to the descriptive result of this study, it has been observed that there were significant differences in the environmental attitudes and environmental behaviors between the undergraduate students enrolled in environmental sciences course and undergraduate students that didn't study the course. Where the students enrolled in environmental sciences course indicated positive environmental attitudes and environmental behavior. However, the total scale score and item scores were clustered just above the mid-point.

This finding supports previous studies which observed that students who had environmental education were more aware of environmental attitudes than other students (Bradley et al, 1999; Thapa, 1999; Pooley and O'Connor 2000; Taloyetal, 2003; Sama 2003; Maki et al, 2003; Yılmaz, Boone and Anderson, 2004; Alp 2005; Erol and Gezer, 2006; Uzun and Saglam 2006; Fernández-Manzanal et al, 2007; Aslan and Cansaran 2008; Ozsoy 2012). The result also agrees with other studies that found significant effects of environmental education on students' environmental behaviors (Bamberg S and Moser G, 2000; Chewla L, 2006; Sivek D, 1988). Otherwise, it disagrees with some previous studies that found the environmental education of the students don't affect their environmental attitudes and environmental behavior (Kahraman, Yalcın, Ozkan, and Aggul, 2008; Ozdemir et al, 2004; Müderrisoðlu H, and Altanlar A., 2011).

Concerning factor one of the scale related to student's attitudes towards the environment: students scoring the three relatively highest were:"Awareness of environmental problems contributes to countries' development", "The so-called ecological crisis facing humankind has been greatly exaggerated", "and Environmental problems have to be discussed in all the countries". These three items reflect the students' consciousness and understanding, the importance of environmental awareness and its effect on countries' development, and how the ecological crisis is threatening humankind of environmental problems and show how they keen and care about the environment which indicates to the students' positive attitudes towards the environment. The lowest item was "I am bored by news related to environmental issues," it might be acceptable for the undergraduate students (teenager) because the positive attitudes towards the environment does not mean they have to be involved in reading news about environment all the time.

In the second factor of the scale which is about student's responsible behavior towards the environment: students scoring the three relatively highest were "For saving energy, I turn off the light in my house when it is not used", "I willingly join activities to help in saving the environment.", "I don't consume long time while I'm showering". In these items students translate their environmental awareness and environmental attitudes in many practical reaction like saving environmental recourses (water and energy). Thus assert the positive effect of the environmental awareness and attitudes on responsible behavior towards the environment. The lowest item was"I prefer using environmentally harmless products". This finding might be logical because the harmless product is somewhat expensive for them as they are still students.

Overall, it's clear that students have a good background knowledge about the environment which is translated in their attitudes and behaviors towards the environment. Although there are many factors could be affect their attitudes and behaviors, the environmental education could be one of the most important factors that affects their attitudes and behaviors towards the environment. The significant difference between students enrolled in environmental sciences course and others who didn't study it confirmed the importance of environmental education that reflect itself in students' environmental attitude and behavior. Therefore, it is a good sign for Ajman University of Science and Technology (AUST) to integrate an environmental sciences course as a required course.

(Ozmen et al, 2005; Ek et al, 2009) showed, an environmental course should be included at university education as well as primary and secondary education. For the future implications, the content and delivering of the environmental course would be restructured to obtain more interests of university students from a wide range colleges and different backgrounds in handling environmental issues and improving their environmental attitudes and behaviors.

The two way ANOVA results revealed significant differences in the perceptions of male and female students' attitudes and behaviors towards the environment. Female students expressed more positive attitudes and behaviors towards the environment than males. This finding is consistent with many other studies (Kuitunen and Tynys, 2000; Talay et al, 2003; Sherkat and Ellison, 2007; Fernández-Manzanal et al, 2007; Torgler et al, 2008; Ek and Kılıç et al, 2009; Kose et al, 2011; Ozsoy, 2012). Also this finding could be logical because females are more sensitive and keen than males, and show high degree of social responsibility and make a significant contribution to environmental protection (Jenkins and Pell, 2006)

These findings indicate that there are differences among the mean scores of students based on their colleges on the Attitude and Behavior Scale towards the Environment. The comparison of mean scores according to their colleges indicate that male students from (Dentistry and Pharmacy) colleges display more positive attitudes and behaviors towards environment than both (law and Information, Mass communication and humanities) and Engineering colleges. On the other hand female students from (Law and Information, Mass communication and humanities) expressed more positive attitudes and behavior towards environment than (Dentistry and Pharmacy) and Engineering colleges.

Actually, it was expected that students with science background (Dentistry and Pharmacy) have more positive environmental attitudes and behaviors than (law and Information, Mass communication and humanities) colleges, as they enrolled in environmental sciences courses and may learn or read about environment for the first time. Consequently, they might be more interested in environmental issues which reflected in their positive attitudes than engineering students.

Findings about evaluation of the environmental course shows positive attitudes towards course materials and that was clear in the choices for the three highest items that were: "Environmental sciences course provides very important information about environmental issues", "Environmental sciences course needs more practical activities" and "After studying environmental sciences course, I feel responsibility

towards the environment“. These items stated students’ understanding of importance of the environmental sciences course information in their life. It shows also their interaction with course materials that made them think and decide that course materials need more practical activities. In addition they consider that the course information had a positive impact on them because it made them feel responsible towards the environment. Also students were very keen to share their positive suggestion to improve the course material.

Conclusion:

Environmental problems have emerged as a serious issue in the world today. So educating people is the main way to reduce the environmental problems by raising awareness and responsiveness towards the environment. Thus Environmental Education (EE) has an effective impact on students’ environmental attitude and environmental behaviors. So, it is an essential way to reduces environmental problems that happened due to lack of environmental legislations all over the globe rather than individual activities.

Education is a long-life process, so it is crucial to teach subjects about environment at all educational stages beginning from pre-school and continuing to university education. It seems to be more important to university’s stage because University’s student of the present will be the leaders in the future. Some of them may be engineers in large factories or administrative staff in private and public places in the future, or as direct policy makers or applying pressure on policy makers in diminishing the environmental problems.

Therefore, universities for all programs and colleges should offer an environmental education program covering environmental sciences to improve awareness and consciousness of students towards environment.

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APPENDEX

Attitudes and Behavior Scale Towards the Environment (ABSTE)

Dear Students,

This questionnaire discusses some items about the environment and our relation with it .It consists of 30 items. Write your personal information, then read carefully every item and choose only one option out of five (strongly agree- agree-not sure-disagree-strongly disagree). We ensure you full confidentially and will only use for scientific research

Thank you for your cooperation

Name :…….	Gender:…….
College:……	Midterm mark:…….
Class :……	Age:……

	ITEM	Strongly agree	agree	Not sure	Disagree	Strongly disagree
1	I concerned about problems affecting the current environment in the world					
2	For saving energy, I turn off the light in my house when it is not used.					
3	There are a little to be done about current environmental problems.					
4	Environmental problems have to be discussed in all the countries.					
5	I willingly join activities to help save the environment.					
6	I avoid buying products in aerosol containers					
7	The so-called ecological crisis facing humankind has been greatly exaggerated					
8	I always talk with people around me about environmental matters.					
9	Awareness of environmental problems contributes to countries' development.					
10	I always watch T.V program about environmental problems.					
11	I don't consume long time while I'm showering					
12	I don't waste much water while I'm brushing my teeth					
13	It's useless to warn people about environmental problems					
14	I think the recycling bins around the country are valuable.					
15	Environmental problems in the UAE is not critical.					
16	I buy only as much as needed while I'm shopping					
17	Seminars and workshops regarding development of environmental awareness are useful					
18	I enjoy reading books and magazines on environmental issues					
19	I prefer using environmental harmless products					
20	Knowledge about environmental problems in not my specialty.					
21	I feel happy when I see people recycle used bottles, cans and papers.					
22	I am bored by news related to environmental issues					
23	I appreciate the efforts made to preserve and protect the environment					
24	Media mast have role in spreading environmental awareness.					
25	I always put any old staff (clothes, shoes…etc.) in recycling bins.					
26	My friends know me as sensible person towards environment					
27	I share links relevant environment and environmental awareness on social networks (Facebook / twitter ,…)					
28	I read labels on products to see if the contents are environmentally safe					
29	I think that is essential to raise the awareness about the dangerous of environmental problem among all citizens					
30	I've always reused the white paper in old notebook.					

Environmental sciences course evaluation

Dear students,

In order to develop the content of environmental sciences course, we kindly ask you to select one options for your point of view for every item. We ensure you full confidentially and will only use for scientific research purpose.

Thank you for your cooperation

N	ITEM	Strongly agree	Agree	Not sure	disagree	Strongly disagree
1	Environmental sciences course is somewhat difficult.					
2	If the environmental courses was not required course, I think I will choose it to study.					
3	Environmental sciences course is an important course for students in science major (medicine - pharmacy …….)					
4	Environmental sciences course provide very important information about environmental issues.					
5	Environmental sciences course is only necessary for passing examination.					
6	After studying environmental sciences course ,I feel responsibility towards the environment					
7	Environmental sciences course made me think to find solutions for environmental problems					
8	The course content successfully covered all environmental issues in very simple way .					
9	Environmental sciences course need more practical activities					
10	Feeling satisfied of studying Environmental sciences course					

DO you think that course material of environmental sciences is satisfied?

Yes ( ) No ( )

If your answer no, please write your suggestion for improving course materials:

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