



Journal of Applied Sciences

ISSN 1812-5654

science
alert

ANSI*net*
an open access publisher
<http://ansinet.com>

A Survey of Awareness and Behaviour in Regard to Environmental Issues among Selçuk University Students in Konya, Turkey

Serpil Önder

Department of Landscape Architecture, Faculty of Agriculture,
Selçuk University, 42031 Selçuklu, Konya, Turkey

Abstract: The purpose of this study was to determine students' awareness of environmental issues and problems and their behaviour towards the environment at Selçuk University, Turkey. For this purpose, an instrument of 18 items were designed and tested on a sample of 375 students from 12 faculties of the university. As the result of the survey; global warming (27.74%) is seen as the most important environmental problem in the world, while depletion of natural resources (25.33%) and mistaken of urbanization (28.00%) were mentioned as the most important environmental problems in Turkey and in Konya, respectively. The students mostly agreed on (47.47%) the education of the people as the most appropriate and imminent solution that can be taken against the problems while printers and electronic media is regarded as the most intriguing equipment (73.73%) that boosts people's awareness. It is also determined that students are concerned about the environmental issues and present positive behaviour towards them. Only 8.53% of the students, participated in the survey, regularly follow the publications about the environment, while just 7.73% of students are holding a membership to an environmental organization.

Key words: Environment, awareness, behaviour, student, university

INTRODUCTION

Since the beginning of the life in the world, Human beings constantly derive benefits from environment to provide their needs and the environment has basically been used to expand the habitat and to improve the quality of life^[1]. The uncontrolled and uncoordinated usage of environmental sources resulted in many problems as deforestation, loss of biodiversity, pollution, ozone depletion, global climate change and over-consumption of natural resources. As a result of the increasing environmental problems, environmental concerns have dramatically increased among the public over the last few decades^[2,3]. However the most important task is to use the resources while protecting the environment since environmental issues will be among the most important key factors of human life in future.

For raising public awareness and enhancing the protective attitude towards the environmental issues, environmental education plays very strategic and important role^[4]. Environmental education aims to raise environmental awareness among human populations and provide opportunities to acquire the knowledge, values, attitudes and skills needed to protect the environment^[5]. Since the universities educate young generations who are expected to be the future leaders in many different areas in the society and who will be the

decision-makes, the role of the Universities in the environmental training of the public is huge. The future decisions of these young generations will affect the sustainability of the human existence, their approach and activities will have important consequences for the environment^[6-8]. For this reason, universities bear profound responsibilities to increase the awareness, knowledge, technology and tools to create on environmentally sustainable future^[9].

As a developing country, Turkey, with its gradually increasing population and industrial growth, is facing many environmental problems. According to the last census, the official population of Turkey is 67 803 927. Approximately half of the population is comprised of young people under the age of 24 years^[10].

Based on the logical approach described in the previous paragraph, it is an important task to analyze the level of awareness and behaviour attributed to environmental issues by university students since it can present significant results that can be used while making the necessary decisions about the education of the students on environmental issues.

From this point of view, the purpose of this study was to determine the awareness of the undergraduate students' at Selçuk University about the environmental problems and to analyze and understand the behavioural characteristics of the students about the solutions.

MATERIAL AND METHODS

The survey was conducted among and limited to the undergraduate students of Alaeddin Keykubat campus located in the city center and the campuses of Meram Education and Meram Medical Faculties located in Meram, a close and quite populated suburb of Konya, during the spring semester in 2005. As one of the most populated and big universities in Turkey, Selçuk University consists of 16 faculties, 5 school of higher education, 25 vocational school of higher education which are located in different district and about 70.000 students and faculty members. On the spot survey method is used for the standard survey forms and during the execution of the survey. The questionnaires were administered at the end of regular class periods and students responded voluntarily. The time required to complete the survey was approximately 20-25 minute. In the survey, Goal-oriented sampling method was used and the population of the participants was decided to be 375^[11]. The numbers of the participant students of the faculties are as follow: The Faculty of Agriculture (42), the Faculty of Engineering and Architecture (34), Faculty of Sciences and Letters (25), the Faculty of Technical Education (19), Faculty of Economics and Administrative Sciences (29), the Faculty of Divinity (35), the Faculty of Fine Arts (21), the Faculty of Law (37), the Faculty of Communications (28), the Faculty of Medicine (43), the Faculty of Veterinary Medicine (30), the Faculty of Dentistry (32).

The questionnaire, used in the survey, was designed in consultation with the experts from the environmental engineering and education faculty of Selçuk University and Çukurova University^[12] who approved its initial design after a thorough scrutiny.

The questionnaire consists of 18 questions and three main parts:

General characteristics of the participants: This part gathers the basic data about the participants e.g., gender, age, family residence, the year spent in the school (freshman, sophomore, junior, senior), family’s monthly income, etc. (5 questions).

Measurement of the awareness: The concern and the perception of the students, with the amount of attention they put on and their level of sensitivity towards the environmental issues are determined (4 questions).

Determination of the behaviour: The behavioural characteristics and general attitudes of the students about how to protect and enhance the environment (9 questions).

SPSS 11.5 software program were used for the data analysis, interpretations and evaluations.

RESULTS

General characteristics of the participants: This part of the survey aimed to gather the basic data about the participants’ gender, age, family residence, the year spent in the school (freshman, sophomore, junior and senior) and family’s monthly income (Table 1).

52.53% of the participants were male while 47.47% were female. The largest group of students (58.87%) was between 21-23 years of age. Freshman, sophomore, junior and senior accounted for 10.13, 28.00, 39.20 and 22.67%, respectively for the students. 36.80% of the participants students grew up in cities and 27.20% of them grew up in metropolitan cities. Only 22.13% of them grew up in a town, while just 13.87% was born in a village and grew up there. Approximately half of the students come from a family, whose monthly income is in the range of 500-1000 New Turkish Lira (NTL). As a result of this, it can be seen that most of the participants come from middle class families.

Students’ environmental awareness: This part of the survey investigated the environmental awareness of the participants. A total of four questions were asked to the participants.

With the first question; 11 common environmental problems were given and students were asked to select the most serious problem in the world, in Turkey and in Konya (Table 2). The most interesting outcome of this

Table 1: Students’ general profile

Variable	Count	(%)
(1) Gender	375	100.00
Male	197	52.53
Female	178	47.47
(2) Family residence	375	100.00
Metropolitan city	102	27.20
City	138	36.80
Town	83	22.13
Village	52	13.87
(3) Age	375	100.00
18-20	109	29.07
21-23	202	53.87
24-26	57	15.20
27<	7	1.86
(4) Year in the school	375	100.00
Freshman	38	10.13
Sophomore	105	28.00
Junior	147	39.20
Senior	85	22.67
(5) Family’s monthly income (NTL) 1\$=1.34 NTL	375	100.00
<500	120	32.00
500-1000	151	40.27
1000-3000	85	22.67
3000<	15	4.00
No response	4	1.06

Table 2: What is the most serious environmental problem in the world, in Turkey and in Konya?

(6) Environmental problem	Most serious problem in the world		Most of serious problem in Turkey		Most of serious problem in Konya	
	Count	(%)	Count	(%)	Count	(%)
Air pollution	5	1.33	79	21.07	*77	20.54
Noise pollution	2	0.53	1	0.26	35	9.33
Water pollution	15	4.00	36	9.60	3	0.80
Soil pollution and loss of farmland	7	1.87	19	5.07	65	17.34
Radiation pollution	32	8.53	7	1.87	2	0.53
Ozone depletion	*93	24.80	15	4.00	5	1.33
Mistaken urbanization	21	5.60	*85	22.67	*105	28.00
Depletion of natural resources	79	21.07	*95	25.33	25	6.67
Rubbish disposal	15	4.00	12	3.20	42	11.20
Global warming	*104	27.74	25	6.67	15	4.00
No response	2	0.53	1	0.26	1	0.26
Total	375	100.00	375	100.00	375	100.00

*The top two most serious problems chosen by the students

Table 3: Which one of the following environmental disaster scenarios do you see as the most possible that the world may face in the future?

(7) Scenarios	Agree categories*											
	1		2		3		4		5		6	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
- Climate changes and global heating	-	-	18	4.8	35	9.33	82	21.85	240	64	-	-
- Starvation and poverty	1	0.27	25	6.67	44	11.73	205	54.67	98	26.13	2	0.53
- The need for other energy sources due to the reduce of petroleum products	5	1.33	23	6.13	34	9.07	95	25.33	217	57.87	1	0.27
- The endangerment of the water resources	-	-	23	6.13	34	9.07	92	24.53	225	60.00	1	0.27
- The conflicts over the natural and water resources	8	2.13	23	6.13	35	9.33	87	23.10	220	58.67	2	0.53
- The abandonment of using the nuclear power	165	44.00	75	20.00	67	17.87	36	9.60	27	7.20	5	1.33
- Human cloning	47	12.53	135	36.00	76	20.27	85	22.67	25	6.67	7	1.86
- The rising importance of the ecological agriculture	15	4.00	46	12.27	115	30.67	125	33.33	72	19.20	2	0.53
- Melting of the icebergs due to the global heating and rise of the ocean levels in the world which might threaten the habitant by the oceans	6	1.60	20	5.33	51	13.60	198	52.80	97	25.87	2	0.53
- Desertification of the world	4	1.07	15	4.00	52	13.87	69	18.4	235	62.66	-	-

*(1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree, 6 = No response)

question is the differences between the perception of the local and global problems. The most serious problems in the world, in Turkey, in Konya as remarked by the students, were global warming (27.74%), depletion of natural resources (25.33%) and mistaken urbanization (28.00%), respectively.

With the second question; ten different disaster scenarios, which may be faced in the future as a result of environmental problems, were presented to the participants (Table 3). Students were asked to put their

thoughts about of the possibilities of these disaster scenarios. They would mark 5 if they strongly agree, 4 for agree, 3 for neutral, 2 for disagree and 1 if they totally and strongly disagree. The overall result was mostly in favour of the high possibility about the occurrence of the disasters in the future. The students' general attitude about the environmental problems that may occur in the future can be assessed as pessimistic.

As the result of the third question, 47.47% of the participants indicated that public education for raising the

Table 4: What are the most viable solutions that can be exercised against the environmental problems?

(8) Precautions	Count	(%)
Technological improvements	38	10.13
Education for raising the awareness of the public	178	47.47
Legal regulations	78	20.80
Using alternating raw material in Industrial plants.	52	13.87
Monetary regulations such as fees, taxes, subventions, loans, etc.	25	6.67
No response.	4	1.06
Total	375	100.00

Table 5: Which of the following can be used most effectively to attract the attention of the people and raise their awareness about the environmental issues?

(9) Activities	Count	(%)
Conferences-seminars	33	8.80
Newspapers, magazines, books	95	25.33
TV-Radio shows	180	48.00
Activities of non-governmental organisations	64	17.07
No response	3	0.80
Total	375	100.00

environmental awareness is the most viable precaution that can be taken against the possible environmental problems. Legal regulations and industrial use of the recycled material were the other possible solutions that came out of the survey with 20.80 and 13.87%, respectively (Table 4).

With the last question of this part, TV-Radio with 48%, print-media with 25.33% and other publication such as books, newspapers and magazines were ranked as the most effective means of propaganda to raise the public awareness of the people about the environmental issues (Table 5).

Students' environmental behaviour: Nine questions were included in this part in order to analyze the attitudes of the students towards the environmental issues (Table 6).

Only a small proportion of students (8.53%) purchase magazines-newspapers and/or books on environmental issues regularly, while 17.07% of the participants do not buy these publications at all (Item: 11). Besides, 29.07% of the students indicated that they like watching TV and Radio shows about the environmental issues and 19.20% of them are not interested in watching the shows (Item: 13).

With reference to items (17) (18) and (10); Although only a small proportion of the students (7.73%) are members of non-governmental environmental organisations, a large proportion (91.20%) of them have participated in at least one of the many environmental campaigns (e.g., for the collection of waste, planting of trees, etc.) in their life. 66.13% of the participants indicated that they can be a part of an environmental campaign and work for an organization voluntarily while only a very small part (7.20%) of them do not want to be included in any kind of environmental campaign.

Table 6: The attitudes of the students towards the environmental issues

Items	Count	(%)
(10) How would you like to be a part of the environmental perseverance activities?	375	100.00
Work voluntarily	248	66.13
Donation	42	11.20
Extra taxes	52	13.87
Nothing	27	7.20
No Response	6	1.60
(11) Do you follow any of the publications(newspapers, magazines, books) about the environmental issues?	375	100.00
Yes, every time	32	8.53
Not regularly	277	73.87
No, never	64	17.07
No response	2	0.53
(12) Which of the following type of waste do you sort?	375	100.00
Papers, newspapers	99	26.40
Glass	21	5.60
Batteries	30	8.00
Plastics	11	2.94
Vegetables	17	4.53
Metals	15	4.00
Do not sort	177	47.20
No response	5	1.33
(13) Do you enjoy following the TV-Radio shows about the environmental issues?	375	100.00
Yes, every time	109	29.07
Not regularly	192	51.20
No, not interested	72	19.20
No response	2	0.53
(14) Which of the following methods of transportation do you prefer for environmental protection purposes?	375	100.00
Bicycle	85	22.67
Cars	27	7.20
Public Transportation (taxi, buses, minibuses)	86	22.93
Subway-train	176	46.93
No Response	1	0.27
(15) What is your reaction against the products that causes the increase of Ozone depletion?	375	100.00
I prefer no to buy any of them.	145	38.67
Do not put any attention	42	11.20
I prefer ozone-friendly products	146	38.93
No idea	37	9.87
No response	5	1.33
(16) What is you reaction against the polluters?	375	100.00
I prefer to make formal complaints	82	21.87
I warn them personally	178	47.47
No Reaction at all	62	16.53
I try to tell people about them and try to warn people about the polluters	51	13.60
No Response	2	0.53
(17) Are you a member of an environmental organization?	375	100.00
Yes	29	7.73
No	342	91.20
No Response	4	1.07
(18) Have you ever taken part in an environmental activity (garbage collection, planting etc.)	375	100.00
Yes	217	57.87
No	156	41.60
No Response	2	0.53

With reference to items (14) and (15); 46.93% of the participants prefer subway and railways for transportation instead of the pollution-generator buses minibuses. 38.93% of them look of ozone-friendly products and choose to buy them if they could have a chance to choose.

47.20% of the students do not sort their recyclables and do not put them in different trash cans. Among the sorted wastes, the recyclable paper wastes come first with 26.40% (Item: 12).

47.47% of them prefer to warn the polluters personally and 21.87% prefers to make formal complaints to the public and legal institutions (Item: 16).

DISCUSSION

The results of this study show that student are concerned about environment to some extends (Items: 6, 7) and maintain a positive behaviour toward environmental issues (Items: 10, 14, 15, 16, 18). However they present inadequacies and do not have well-educated approaches about some other environmental issues (Items: 11, 12, 13, 17).

Environmental education plays a very important role in improving the environmental literacy which consists of peoples' perception, knowledge, awareness, attitude toward environmental issues^[13]. Increasing environmental literacy will lead to a positive change about the environmentally responsible behaviours or the actions of the people^[14,15]. Determining what people know about the environment, how they feel about it and what actions they take that may help or harm to the environment is critical to establishing the sustainability of a community. This will create a strong national environmental movement that will conserve the environment by solving environmental problems^[1,16]. Environmental education in schools and other educational institutes is an important strategy in achieving environmental improvement and in the formation of positive attitudes and behaviour toward the environment of the young generations^[17,18]. In order to have well-educated and concerned people about the environmental issues, Educational program should be revised to include classes and programs in all of the schools including the primary Schools. Other than the schools, educational programs and shows should be prepared to be aired on national TV and Radios. More educational activities should be organized at the universities (e.g., conference, seminars and symposiums). Printed and electronic media (including the internet) is the main source of information about environmental issues^[1,19-21]. The mass media should therefore be used more intensively to facilitate the transmission of environmental information and promote more positive environmental attitudes.

Member students of environmental organizations are aware of the environmental problems; therefore they present a positive approach toward the environmental

issues^[8]. Students should be encouraged to join an environmental organization and taste the joy of making something about the environment and being a part of a charity.

Young people tend to be part of a group and show their skills to other members of the group and the society^[22]. Environmental organizations and educational institutes should base their activities on the young generations and help them present the gem hidden inside their young and precious brain. Organizing activities and encouraging them to join the organizations can play a very important role in the long path of environmental awareness.

Unfortunately, reading is not a preferred habit among the young people. They do not read unless it is something about the classes they take or something really interesting. Having said that, environmental publications are not among the favourite kind of publications that students prefer to read. As a solution to this problem, students should be encouraged to read and learn about the environmental issues. The classical way of encouragement by the family and school might work to some extend, but the famous writers and celebrities may also be used to help students to start reading.

Environmentally friendly products should be made cheaper to encourage people to use them and people should be educated to a level that they can realise the long term advantage of using these products nationwide.

Finally, in order to reach the real and perfect solutions about the environmental problems, it is crucial to work towards an integral dimension in which social, political, economical and environmental values are needed to develop a sense of responsibility and respect for the environment nationwide.

REFERENCES

1. Sudarnadi, S., S. Suzuki, T. Kawada, H. Netti, S. Soemanti and A. Tritugasawati, 2001. A survey of perception, knowledge, awareness and attitude in regard to environmental problems in a sample of two different social groups in jakarta, Indonesia. *Environment, Development and Sustainability*, 3:169-183.
2. Décamps, H., 2000. Demanding more of Landscape Research (and researches) *Landscape and Urban Planning*, 47:105-109.
3. Thapa, B., 2001. Environmental Concern: A comparative analysis between students in recreation and park management and other departments. *Environmental Education Research*, 7: 39-53.

4. UNESCO-UNEP, 1995. Agenda 21, 30 May 2000., www.unep.org
5. Castillo, A., S. Garcia-Ruvalcaba, R. Martinez and M. Luis, 2002. Environmental education as facilitator of the use of ecological information: A case study in Mexico. *Environ. Education Res.*, 8: 395-411.
6. Wong, K-K., 2003. The environmental awareness of university students in Beijing, China. *J. Contemporary China*, 12: 519-536.
7. Talay, İ., S. Gündüz and N. Akpınar, 2004. The determination of environmental awareness of university students. A case study: Ankara University, Turkey. *Intl. J. Environ. Pollu.*, 21: 293-308.
8. Budak, D.B., F. Budak, Z. Zaimoğlu, S. Kekeç and M.Y. Sucu, 2005. Behaviour and attitudes of students towards environmental issues at faculty of agriculture Turkey. *J. Applied Sci.*, 5: 1224-1227.
9. Corcoran, P.B., K.E. Walker and E.J. Wals, 2004. Case Studies, make-your-case studies and case stories: A critique of case-study methodology in sustainability in higher education. *Environ. Education Res.*, 10: 7-21.
10. SIS, 2000. Interim Result of the 2000 General Population Census, Office of the Prime Minister, Republic of Turkey. State Institute of Statistics, www.die.gov.tr
11. Çiçek, A. and O. Erkan, 1996. Research and Sampling Methods in Agriculture Economy. G.O.Ü.Z.F. Publication No. 12. Tokat.
12. Yücel, M., C. Uslu and N.P. Say, 2003. The determination of environmental sensitivity of personal and students at Çukurova University. Ç.Ü.Z.F. Research Project No. BAP-PM-2002-01, Adana.
13. Hens, L., 2004. Concepts and Trends in Environmental Education for Sustainable Development. In: *Encyclopaedia of Life Supporting Systems*. EOLSS Publishers, Oxford. UK.
14. Sivek, D.J., 2002. Environmental sensitivity among wisconsin high school students. *Environ. Education Res.*, 8: 155-170.
15. Pooley J.A. and M. O'Connor, 2000. Environmental education and attitudes: Emotions and beliefs are what is needed. *Environment and Behaviour*, 32: 711-723.
16. Tarrant, M.A. and H.K. Cordell, 1997. The effect of respondent characteristics on general environmental attitude-behaviour correspondence. *Environmental and Behaviour*, 29: 618-633.
17. Barraza, L. and R.A. Walford, 2002. Environmental education: A comparison between english and mexican school children. *Environ. Education Res.*, 8: 171-186.
18. Walker, K. and T. Loughland, 2003. The socio-cultural influences on environmental understandings of australian school students: A response to rickinson. *Environ. Education Res.*, 9: 227-239.
19. Geoh-Chin, T., C. Kim-Eng Lee and G.K. Chuan, 1998. A survey of environmental knowledge, attitudes and behaviour of students in Singapore. *International Research in Geographical and Environmental Education*, 7:181-202.
20. Schultz, P.W. and L. Zelenzy, 1999. Values as predictors of environmental attitudes: Evidence for consistency across 14 Countries. *J. Environ. Psychol.*, 19: 255-265.
21. Fien, J., I.T-C. Poh-Ai, D. Yencken, H. Sykes and D. Treagust, 2002. Youth environmental attitudes in australia and Brunei: Implications for education. *The Environmentalist*, 22: 205-216.
22. Cüceloğlu, D., 1999. *Human and behaviour*, Remzi Publisher. İstanbul, pp: 591.