Recycling Awareness among Undergraduate Student Under KAED Environmental Education:

A case Study of KAED's Students Recycling Behaviour.

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ABSTRACT: The combination of the Muslims practices of conservation and the environmental education in KAED ensured the recycling awareness of the students in the faculty. Recycling awareness among students helps in cleaning up the environment and participating in the daily natural life cycle to achieve sustainability. The amount of waste carried out of the studio step in the faculty everyday could be a real problem. Students work in the studio most of the time, everyone comes with food and drinks plus the paper used for the projects and model making. The purpose of the research was to analyze the relationship between the recycling awareness of the students and the environmental education they undertake in KAED. The study examined the differences in recycling awareness among the students of KAED and focused towards the students' recycling awareness in relation to the year of study and the environmental studies they undertake. Chi-square and correlation were calculated for the data to determine the difference in recycling awareness among students in different years of study with respect to gender, department, attitude, facilities location and recycling knowledge undertaken in the faculty. The findings showed that the students' recycling awareness is significantly related to the year of study. Gender and department showed no relation with the recycling awareness of the students. The results also showed that facilities location played an important part on awareness. Recommendations included intensifying the environmental educational programs to plan for more sustainable environments and increasing the number of recycling bins for better accessibility. Future studies are recommended to focus on the enhancement of the environmentally friendly behavior with respect to sustainable development.

Key words: Recycling awareness, sustainability, environmental education, KAED

1. Introduction

Recycling is the best thing Muslims can do to help clean up the environment and participate in the daily natural life cycle. KAED incorporates the Islamic perspective into its educational system. Islamic values include environmental considerations that encourage holistic environmental and natural resources management, thus maintain sustainable development. These efforts by KAED to promote sustainable development from the Islamic perspective have resulted in increasing the students' awareness of the environmental issues and reduce the stress of the environment on the health of the humans and to protect natural resources. There is significant research describing and analyzing the recycling behaviour of individuals (Coggins,1994; Schultz et al,1995; Tucher,1998). However, there is little research describing the recycling behaviour of university students with regard to the environmental education they gain throughout their years of study. This behaviour is important to understand how the university waste problem can be solved at the same time reduces disposal costs. The purpose of this paper is to analyze the relationship between the recycling awareness of the students and their year of study. Moreover, the paper aims to analyze the recycling awareness of the students and the environmental education they undertake in KAED.

This research examines the differences in recycling awareness among the students of KAED. KAED is one of the kulliyahs in IIUM located on the west side of the campus and consists of six departments (ARCH, URP, ALA, AAR and AQS). The total number of postgraduate students is 1410 of which 615 are males and 795 are females (KAED office, 2009). The research focused towards the students recycling awareness among undergraduate students in relation to their year of study and the environmental education they undertake.

2. Literature Review

Earlier studies on the recycling behaviour and awareness defined the characteristics of the individuals who recycle and those who do not, enabling the definition of certain characteristics of recyclers (Schultz et al, 2001). Basically the recycling behaviour is related with three variables (Barr, S. Et al, 2001): environmental values, situational and psychological factors. Environmental values create awareness towards the environment. People who value the environment are more likely to behave in an environmental friendly way (Vining, J. and Ebreo, A.1992). Situational

factors include socio-demographic, education and experience based influences (Berger, 1997; Holzer, 1990; Daneshvary et al, 1998). The psychological factors include humane motives to recycle, environmental awareness in a belief that individuals are responsible to protect the environment (Selman, 1996). Sihchao Li (2003), argue that there is a significant relationship between males and females recycling behaviour. However, Roth's (1992) defines environmental education as the education of individuals to increase their awareness of their environment and environmental issues, to work towards solving environmental problems, to involve them actively in maintaining quality of life and the quality of the environment and to make them understand that humans are actually a part of nature. Thus, environmental education is meant to instil environmental values in students. Within this framework the study hypothesized that the level of recycling awareness of the students is dependent on the year of study (students in fourth year are more aware of recycling than first year students) and that the recycling awareness of the students depends on the environmental education they undertake in KAED. The objectives were formulated as to identify how educating the students for environmental knowledge in KAED affects their level of recycling awareness as they proceed to higher classes and to determine the level of recycling awareness of the students in KAED in relation to the environmental studies they undertake. Two research questions were asked: (1) Does the level of the student's recycling awareness relate to the year of study? (2) Does the environmental education they undertake relate to their level of recycling awareness?

3. Research Method

A stratified sampling was applied to the students in KAED to obtain a reliable valid data and optimum result (Babbie, 1989). Then equal number of students was randomly selected from the different departments in different years of study. Total number of students surveyed is 100 students.

The study was conducted to examine the differences in scores on awareness by gender, year of study, department, facilities, attitude and knowledge. The focus of the study is the recycling awareness compared with the students' year of study (from first to fourth year undergraduate). The six departments were listed (ARCH, URP, ALA, AAD, AAR and AQS). Facilities meant location of the existing facilities in the kulliyah defined as not easily accessible, accessible and easily accessible. Knowledge indicated KAED environmental source of knowledge as a relevance of

recycling awareness for the students defined as very irrelevant, irrelevant, relevant and very relevant.

The survey distinguished between the different years of study for the students so result differences could be calculated. Following the questionnaire students were asked about their recycling awareness and at the same time records of gender, year of study, attitude, facilities and knowledge were taken as variables affecting recycling awareness. Students' recycling awareness is a measure of why they are aware or should be aware of recycling. The measure was divided into very into very unaware, unaware, aware, very aware. The survey responses were entered into SPSS and coded for statistical analysis. Chi-Square and Pearson's correlation were calculated for the data to determine the extent of association and linear relationship to examine the differences in recycling awareness among the students in the different years of study with respect to gender, department, attitude, facilities location and knowledge on recycling obtained from the environmental studies in the kulliyah. Cross tabulations are also performed in the analysis to increase the value of the information obtained.

3.1 Findings and Discussion

According to the analysis it could be assured that the research hypothesis is true and the level of the students' recycling awareness has a high significant relationship with the year of study related to the more environmental education they undertake as they proceed to higher classes during their fourth year course in KAED. This finding support Roth's (1992) findings defining environmental education as increasing environment awareness of individuals of their environment and resulting in more environmental friendly behaviour.

Effect of gender was not noticeable, male and female students showed same level of recycling awareness. This does not support Shichao Li (2003) findings arguing that there is a significant difference in recycling behaviour between the males and females. Departments had no effect on the recycling awareness of students. Location of facilities played an important part on awareness; some students did not simply recycle because the recycling bins were not easily accessible.

3.2 The Research Hypothesis 1

The level of recycling Awareness depends on the year of study (fourth year students are more aware of recycling than first year students). (Table 3. 2.1)

According to Chi-square test: Df: 9, χ^2 critical value: 16.1919, χ^2 obtained: 134. Due to high value of chi-square the null hypothesis is rejected and research hypothesis is accepted.

Table 3.2.1: Year of Study and Recycling awareness Cross Tabulation

Year of Study	Recycling Awareness				Total
	Very Aware	Aware	Unaware	Very Unaware	
First Year	0	0	5	20	25
Second Year	11	13	1	0	25
Third Year	24	1	0	0	25
Fourth Year	25	0	0	0	25
Total	60	14	6	20	100

Source: Field Survey (2009)

3.3 Pearson Correlation

The value of Pearson correlation obtained is 0.835 indicating a strong positive correlation between the year of study and the level of recycling awareness (Table 3.2.2).

Table 3.3.1: Correlation between Recycling Awareness and Year of study

		Recycling Awareness	**Year of Study**
Recycling Awareness	Pearson Correlation	1	0.835**
	Sig. (2-tailed)		0.000
	N	100	100
Year of Study	Pearson Correlation	0.835**	1
	Sig. (2-tailed)	0.000	
	N	100	100

Source: Field Survey (2009)

3.4 The Research Hypothesis 2

The level of recycling Awareness is relevant to the environmental education they gain as they proceed to higher classes. Students in higher classes showed that their recycling awareness was due to the environmental studies they take. Correlation analysis was carried out for further justification.

3.5 *Pearson Correlation*

The value of Pearson correlation obtained is 0.692 indicating a positive correlation between the year of study and the relevance of recycling awareness in relation to the environmental studies they undertake (Table 3.5.1).

Table 3.5.1: Correlation between Relevance of Recycling Awareness and Year of study

		Relevance of Recycling Awareness	**Year of Study**
Relevance Recycling Awareness	Pearson Correlation	1	0.692**
	Sig. (2-tailed)		0.000
	N	100	100
Year of Study	Pearson Correlation	0.692**	1
	Sig. (2-tailed)	0.000	
	N	100	100

Source: Field Survey (2009)

4. Conclusion

The study was carried out to cast light on the relevance of the environmental studies the students undertake and their recycling awareness. The results showed that the reason for the students recycling awareness depends on the environmental education they attain during their years of study. Results showed that year of education plays an important role in the students recycling awareness. KAED is highly reputable of its environmental concern and cares much for shaping its students as future designers and planners who support environmental friendly concepts and eventually sustainable developments. Future research is recommended to understand how the different components of environmental education interact in the different years of study so that effective environmental awareness programs can be established. It should also be conducted to analyze the impact of the level of religiosity on environmental friendly behaviour among students.

References

Babbie, E. R. (1989): *The practice of social research* (5th ed.). Belmont, CA. Wadsworth.

Barr, S. Et al (2001): *Differences between Household Waste Reduction, Reuse and Recycling Behaviour: a Study of Reported Behaviours, Intentions and Explanatory Variables*. Environment and Waste Management, 4 (2), 2001

Berger, I. E. (1997): *The Demographics of Recycling and the Structure of environmental Behaviour*. Environment and Behaviour, 29, (4), pp 515-531.

Coggins, P. C. (1994): *Who is the recycler?* Journal of Waste Management, 52,pp. 317-325.

Daneshvary, N. Et al (1998): *Solid Waste Recycling Behaviour and Support for Curbside Textile Recycling*. Environment and Behaviour, 30 (20), pp.144-161.

Ebreo, A. And Vining, J. (1992): *Predicting recycling from global and Specific Environmental Attitudes and Changes in Recycling Opportunities.* Journal of Applied Social Psychology, vol. 22, no. (20), 1580- 1607.

Roth, C. E. (1992): Environmental Literacy: Its Roots, Evolution, and Directions in the 1990's. Columbus, OH: Eric/CSM Environmental Education.

Schulltz, P. W. Et al (1995): *Who Recycles and When? A Review of Personal and Situational Factors.* Journal of Environmental Psychology, 15, 105-121.

Schahn, J. and Holzer (1990): Students of individual environmental Concern: The Role of Knowledge, gender and Background variables. Environment and Behaviour, 22, (6), pp. 767-786.

Selman, P. (1996): Local Sustainability: Managing and Planning Ecologically Solid Places. Chapman London.

Shichao Li et al (2003): *Recycling Behaviour Under China's Social and Economic Transition The Case Study of Metropolitan Wuhan*. Environment and Behaviour, vol.35, no.6, November, 2003, pp. 784-801.

Tucker, P. et al (1998): *Predicting Recycling Scheme Performance: A Process Simulation Approach*. Journal of Environmental Management, 53, pp. 31-48.

Vining. J. and Ebreo, A. (1990): What makes a Recycler? A comparison of Recyclers and Non-recyclers. Environment and Behaviour, 22, (1), 55-73.