

Assessment of Elementary School Teachers Attitude towards Major Factors of Environmental Education in Developing Countries: Case Study in Iran

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ABSTRACT

Over the last few decades, environmental work has increased significantly. An important part of this has to do with attitudes. School teachers play a significant role to develop positive attitudes towards environmental sustainability. This study identifies the environmental attitude among elementary school teachers in relation to gender, education and residential background in fall of 2011. A questionnaire to measure the environmental attitude was administered to a random sample of 346 elementary school teacher in Ahvaz. The questionnaire consisted of 20 closed questions grouped into the following categories of major environment issues: Need for Education about Environmental Problems, The Importance of Fieldwork and Activities for Environmental Education, Environmental Contamination and the Need for Conservation, Environmental Protection Action. Analysis of statistical results revealed significant difference in the environmental attitude of elementary school teachers in relation to their educational level. However, no significant difference was observed in relation to the gender and residential background of elementary school teachers.

Keywords: Environmental attitude, Elementary school teachers, Environmental education, Ahvaz, Iran

INTRODUCTION

The role of education in understanding protecting and solving problems related to environment has been realized all over the world since 1970. Environmental education is the process of recognizing values and the clarifying concepts in order to develop the skill and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biophysical surroundings (shobeiri, 2006). Environmental attitudes (EA) have been the topic of a great number of studies (Boeve-de Pauw and Van Petegem, 2010) and Researchers agree that the most influential method for the individuals to change consumption habits and living styles, which is considered to be one of the leading causes of environmental problems, is “education” (Gough, 1997; Davis, 1998; Palmer, 1998; Corral-Verdugo and Armendariz, 2000; Pooley and O’Connor, 2000; Jacobs, 2002; Christenson, 2004; Engels and Jacobson, 2007; Travis, 2007; Vrasidas et al., 2007; Desjean-Perrotta et al., 2008; Yurt et al., 2010). Jianguo (2004) stated that “the environmental awareness and environmental quality are important indicators to judge how civilized a nation or race is. Young (2000) indicated that public awareness through educational programs is very important and an essential step toward sustainable developments.

The school system provides the largest organized base for environmental education and action. With children in the plastic age, school offers an effective instrument for imbedding in them the desirable environmental ethics. Teachers are one of the important factors, who are bound to affect this program. They can provide a vital link in the delivery of environmental knowledge, its associated problems and their solutions (Mosothwane, 1991). The teacher should be aware of the environmental education aspects, only then she or he can make the future generation aware of the environmental problems and their solutions (Nagra, 2010). Early childhood and adolescence years, comprising a critical period in terms of cognitive and social development, are of vital importance concerning making teenager attain positive environmental attitude and behaviors. Therefore, it is required for elementary school teachers that they spend more time on the activities over realization of environmental goals. In formal, school-based environmental education, teachers have an important role in providing students an adequate knowledge base and clear understanding of environmental problems (Khalid, 2001). Groves & Pugh (1999) stated that students’ misunderstandings might arise from incorrect understandings passed along by their teachers. Recent researches in environmental education support the idea that teachers have poor understanding of the actual environmental problems (Michail et al., 2007; Summers et al., 2000). Therefore, it is necessary to educate prospective teachers who incorrectly understand causes, consequences and reducing of major environmental problems (kisoglu et al., 2010).

Several studies in this field have served an important function by developing knowledge, concern, attitude, awareness, etc. among the masses to preserve, protect and conserve the environment from various types of problems and to take effective decisions for enacting environmental laws (Nagra, 2010). The researchers have carried out some studies, which are reviewed below.

Pradhan (1995) compared the environmental awareness of 124 B.Ed. students studying in two-teacher education institutions and revealed significant variation in environmental awareness of urban and rural teacher trainees, the master’s degree holders and the bachelor’s degree holders and the subject background of trainees.

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Patel (1999) concluded from his study on primary teachers in Dang district of Gujarat that the level of environmental awareness of these teachers was high. Further, he also found that male teachers, experienced teachers (more than 35 years) and graduate teachers had higher environmental awareness than their counterparts (female, less experienced and Primary Teacher Training).

Owens (2000) investigated nominal environmental literacy in urban and middle school teachers. Significant differences were found among teachers according to racial or ethnic background, subject areas taught and years of teaching experience. Pre-service and in-service environmental courses appear to have a positive impact on environmental behavior, environmental sensitivity, awareness and values, but appear not to impact environmental knowledge.

Shobeiri et al (2006) analyzed the influence of gender and type of school on environmental attitude of secondary school teachers in Iran (Tehran city) and India (Mysore city). Results revealed that there are significant differences between Indian and Iranian teachers in their level of environmental attitude. Also there are significant differences between them in environmental attitude across and within two groups with regard to their gender. Also in overall, type of school management (Government and private) is not a factor, which can affect teacher's environmental attitude. Nagra (2010) found significant difference in the environmental education awareness level of school teachers in relation to their level, residential background and subject specialization. However, no significant variation was observed in relation to the gender of school teachers.

Yurt et al (2010) conducted a study with a purpose to determine early childhood teacher-candidates' environmental attitudes in Turkey. It was found that no significant difference in terms of gender and location between total scale scores of the pre-service teachers. In other words, environmental attitudes of pre-service teachers did not differ depending on gender and location.

In this study have been investigated level of environmental attitude and influence of gender, education level, and residential background on environmental attitude of elementary school teachers in Iran.

METHOD

Sampling of the study

The population for the sample was elementary school teachers of Ahvaz. That they are teaching at 2011-12 school year. A total sample of 346 elementary school teachers was selected using random sampling technique. 82.1 percent of elementary school teachers included in the study was female, while 17.9 percent was male. And majority of the teachers (95%) expressed that they spent the live in city, While 5 percent said that they lived in a village. In addition, the education levels of the respondents were 15.6 percent high school diploma, 43.6 percent university primary degree, and 40.8 percent were teachers with bachelor and/or higher degrees.

Data collection tool

The study was conducted by means of a questionnaire. The first part included demographic questions dealing with gender, residential background and education level. In the second part of questionnaire, a survey instrument developed by Fernandez-Manzanal et al. (2007) was used to assess the attitudes of elementary school teachers against environment. The scale which was carried out with 952 students in order to determine validity and reliability of environmental attitude scale targeting at university students comprised of 20 items. It was made up depending on 5 itemed likert type with "Strongly Agree, Agree, Indifferent, Disagree, and Strongly Disagree" Cronbach alpha reliability coefficient of the scale was found as $\alpha = 0.85$.

The adaption and validity-reliability studies of "The Environmental Attitude Scale" in the current study were conducted by researchers. The items of the scale were firstly translated into Persian, and then necessary arrangement was conducted depending on the ideas of specialists in the field of environment and education.

The pilot data were collected with 30 elementary school teachers and reviewed to determine the reliability coefficient of the questionnaire. As a result of validity analysis, inner consistency reliability coefficient was decided as Cronbach alpha 0.82. In addition, it was determined that in the two half test reliability analysis; the reliability coefficient for the first half was 0.63. While that of the second half was 0.72; Spearman Brown coefficient and Guttman Split-Half reliability coefficient for the two halves were 0.88.

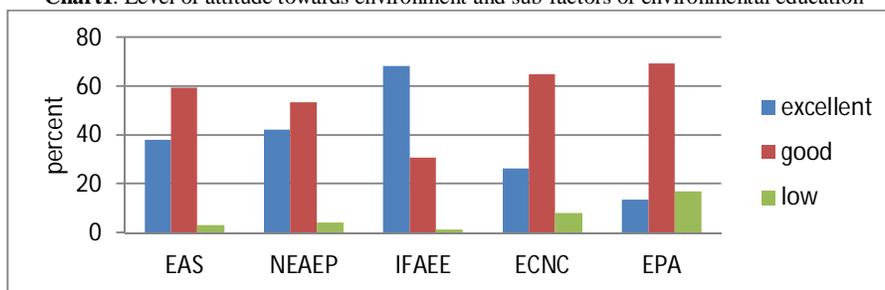
The alpha coefficient of the first factor of the scale (Need for Education About Environmental Problems-NEAEP) was 0.66; that of the second factor (the Importance of Fieldwork and Activities for Environmental Education-IFAEE) was 0.78; that of the third one (Environmental Contamination and the Need for conservation-ECNC) was .51; that of the fourth one (Environmental Protection Action-EPA) become 0.54.

Therefore, it is likely to say that the scale is reliable enough and the items comprising the scale are homogeneous. The results were evaluated by using Spss package program. Independent sample *t* test analysis was used for gender and residential background. To analyze the effect of education level on teachers' environmental attitudes, ANOVA analysis was used.

RESULTS

Results of chart 1, shows that the large percentages of elementary school teachers have a good attitude towards the environment and, more of teachers have an excellent attitude about IFAEE sub-factor.

Chart1. Level of attitude towards environment and sub-factors of environmental education



As given in table 1, the elementary school teachers included in the study obtained $\bar{x} = 77.64$ out of the EAS, $\bar{x} = 21.76$ out of IFAEE sub-factor, $\bar{x} = 19.77$ out of NEAEP sub-factor, $\bar{x} = 18.74$ out of ECNC sub-factor and $\bar{x} = 17.37$ out of EPA sub-factor. In the analysis of scores, it is clear that the mean scores of total scale and IFAEE sub-factor was higher compared to the scores obtained from the other subscales.

The fact that elementary school teachers got higher scores out of the IFAEE sub-factor compared to other sub-factors ($\bar{x} = 21.76$) could be due to the fact that there is not enough attention to fieldwork activities in educational system and programs, so this issue is further understand by elementary school teachers.

The study carried out by Manzanal, Barreiro, & Jiménez (1999), showed that fieldwork helped students acquire a deeper and more solid understanding of ecological concepts and led to the development of more positive attitudes toward the defense of the ecosystem. The students involved in the fieldwork analyzed the problems with a wider variety of arguments. So, such kind of activities should be incorporated into curriculum for better understanding of environmental concepts, environmental problems and development of favorable attitudes toward environmental protection.

Male and female elementary school teachers showed no significant difference in mean scores of environmental attitude ($P = 0.863 > 0.05$). Thereby highlighting that gender was not an important factor affecting environmental attitude among the elementary school teachers.

There are a lot of studies examining the effect of gender on environmental attitude in the literature. Arcury and Christianson (1993), Arp and Howell (1995), and Blocker and Eckberge (1997) pointed out that environmental attitude factor did not change depending on gender, which is parallel with the findings of the current study (Reported by Zelezny et al., 2000). Similarly, in a study by Yurt et al. (2010), it was found that there was no significant difference in terms of gender depending on the attitudes of early childhood teacher candidates.

As determined by independent samples *t* test, there were no significant difference with regard to residential background of elementary school teachers between mean scores of the environmental attitude ($P = 0.060 > 0.05$).

There are several studies showing that urban people had more positive environmental attitudes compared to rural people Berenguer et al., (2005) and Nagra (2010). But, in the studies conducted by Guagnano and Markee (1995), Xiao and McCright (2007), and Yurt et al., (2010), no significant difference was found at the environmental care level in terms of the location lived. These findings support the findings of the current study.

Referring to table 4, there was a statistically significant difference among the mean scores of teachers' environmental attitude and their education level ($P = 0.000 < 0.05$).

The education level played a significant role in the degree of environmental awareness (ziadat, 2010). Responses to the questionnaire indicated that environmental attitude is affected by different in the educational level. Teachers with higher education level showed significant variation in environmental attitude than teachers with lower education level.

According to the result of LSD-ANOVA analysis, significant differences were found between teachers with high school diploma and teachers with university primary degree ($P = 0.013 < 0.05$), teachers with high school diploma and teachers with bachelor and/or higher degree ($P = 0.000 < 0.05$), teachers with university primary degree and teachers with bachelor and/or higher degree ($P = 0.017 < 0.05$).

The fact that teachers with higher educational levels had higher environmental attitudes can be attributed to the reason that higher the educational level, the more aware they are of environmental issues. Even when it comes to the comparison of awareness level of students and teachers, the results show that teachers have higher awareness level than the students (Shahnawaj 1990).

Table1. The means of scores the teachers obtained at the Environmental Attitude Scale and its sub-factors

	Mean (\bar{x})	Standard Deviation	Standard Error	Minimum (Min.)	Maximum (Max.)
EAS score	77.64	8.43	0.45	51	98
NEAEP sub-factor	19.77	2.71	0.14	8	25
IFAE sub- factor	21.76	2.57	0.14	10	25
ECNC sub-factor	18.74	2.78	0.15	11	25
EPA sub factor	17.37	2.81	0.15	11	24

TABLE 2. *t* test results of elementary school teachers' gender concerning the differences of mean scores they obtained at the Environmental Attitude Scale

gender	<i>N</i>	Mean(\bar{x})	<i>Sd</i>	<i>Difference</i>	<i>Sig.</i>	<i>t</i>
female	284	77.60	8.56	0.20	0.863	0.173
male	62	77.80	8.16			

(p>0.05)

TABLE 3. *t* test results of elementary school teachers' residential background concerning the differences of mean scores they obtained at the Environmental Attitude Scale

Residential background	<i>N</i>	Mean(\bar{x})	<i>Sd</i>	<i>Difference</i>	<i>Sig.</i>	<i>t</i>
city	328	77.44	8.47	- 3.84	0.060	- 1.88
village	18	81.28	7.02			

(p>0.05)

TABLE 4. Results of ANOVA analysis for educational level of elementary school teachers

	<i>Sum of Square</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>P</i>
Between Groups	1263.166	2	631.583	9.305	0.000
Within Groups	23280.675	343	67.874		
Total	24543.841	345			

(p<0.05)

TABLE 5. Results of LSD-ANOVA analysis for educational level of elementary school teachers

(I) education	(J) education	<i>Mean Difference (I-J)</i>	<i>Sd.Error</i>	<i>Sig.</i>
High school diploma	University primary degree	-3.26085*	1.30630	0.013
	Bachelor and/or higher	-5.57329*	1.31844	0.000
University primary degree	High school diploma	3.26085*	1.30630	0.013
	Bachelor and/or higher	-2.31243*	.96482	0.017
Bachelor and/or higher	High school diploma	5.57329*	1.31844	0.000
	University primary degree	2.31243*	.96482	0.017

*. The mean difference is significant at the 0.05 level.

Conclusions

Teachers play an important role in educating their students about environment, its related problems and solutions. For this, the teachers themselves should have the necessary level of environmental education awareness. This suggests the need for introducing and enriching environmental education programs in both in-service and pre-service teacher education programs.

As a conclusion, it was determined that when we compared the scores of preschool pre-service teachers they obtained at The Environmental Attitude Scale and sub-factors, the highest mean was the total score, then came the Importance of Fieldwork and Activities for Environmental Education sub-factors. On the other hand, the lowest score preschool teachers got was at the sub-factor of Environmental Protection Actions.

It was also found that environmental attitudes of elementary school teachers did not differ significantly depending on gender and the residential background. However, revealed significant difference in the environmental attitude of elementary school teachers in relation to their educational level.

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