Original Research

Exploring the effectiveness level of environment- assistant project on environmental knowledge, attitude, and behavior of primary school students in the city of Behbahan

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ABSTRACT:

One of the most important solutions of environment protection and support as well as prevention from its destruction and pollution is taking advantage of appropriate training programs and culture domination practices in this field. In this study, the effectiveness level of environmental training on environmental knowledge, attitudes, and behaviors were studied among the primary school students in the city of Behbahan. Statistical population in this research includes fourth, fifth, and sixth grade students in 11 schools in the city of Behbahan who received environmental trainings. Students were taught in three 45-min sessions by trained teachers. They were evaluated before and after the training. Obtained results in this study showed that a significant relationship exists between environmental knowledge promotion and attitude toward environment as well as environmental values and environmental behaviors of primary school students.

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INTRODUCTION

Fast progress and expansion of modern science and technology, industrialization of cities, and development of urban communities have provided a considerable number of facilities for human beings in the 20th century. However, applying these advanced technologies have created many problems as well. Harmful remnants of fuel from industrial centers and excessive usage of harmful materials in agricultural and industrial systems have caused environmental pollution and hard consequences for living things (Shafee, 2009). Reviewing the situation of environment around us, we realize that one of the main reasons of transformation and destruction is unawareness or lack of attention due to lack of scientific trainings, selfishness of human beings and not obeying values and traditions of the past in order to maintain and support it. Thus, one of the most important solutions of environment protection and support as well as prevention from destruction and pollution is taking advantage of appropriate training activities and culture domination practices in this field.

The higher the level of training and quality is, according to scientific principles, the more its effectiveness will be. Training, in all aspects from official, non-official, specialized, regular or irregular, is one of the paths to reach sustainable development and it is the most effective tool and method to increase awareness of people while dealing with problems of societies (Bahrebar *et al*., 2013) Education ministry, considering its vastness, enjoys the highest level of contact with people and they have the highest number of tools to convey messages in cities and villages (Maroufi *et al*., 2001). Therefore, this ministry can have noticeable effectiveness on appropriate culture building

and training of the future generation by suitable training in different fields. Most countries have paid special attention to this issue and they have included children and teenager training in their educational planning. For instance, in Germany, environment training is one of six topics of interdisciplinary being taught in all schools. In Greece, environment training has been accepted as part of training plan in primary and junior high school training program since 1991 and environment-training centers have regionally been established across Greece. India has also used films, posters, and radio and TV programs in order to increase environmental awareness (Khoshfar *et al*., 2010).

A substantial number of conducted studies indicate the effect of environment training on promotion of knowledge, attitude, and skills of people. Khoshfar and Salehi (2009) in Turkey revealed that the level of training and knowledge has the highest effect on environmental behaviors which conflicts those of Hinez. This is because, in Hinez study, knowledge ranked fifth for the effect of positive environmental behaviors and verbal commitment had the highest effect on positive environmental behaviors (Omran and Mohamamdi, 2008). Previous researches indicated the fact that if environmental interest and awareness are not initially shaken, individuals will most likely continue their former habits which showed great importance of this training in primary levels (Omran and Mohamamdi 2008).

Based on the expansion of urbanization in the last few years, future generation will have less direct contact with nature as well as less inattention to nature. This is why the more children are familiar with nature, the more we have guaranteed future environment of our

Table 1. Means of student's attitude toward environment in pre-test/post test groups

S. No		Group	Number	Mean	Standard deviation
1	Attitudes of people toward environment	Before training	215	36.09	4.249
		After training	215	37.97	3.112

Table 2. Means of student's behavior toward environment in pre-test/post test groups

S. No	Group		Number	Mean	Standard deviation
1	Behaviours of people toward environment	Before training	215	33.93	6.348
		After training	215	35.67	5.425

Table 3. Means of student's attitude toward environmental values in pre-test/post test groups

S. No	Group		Number	Mean	Standard deviation
1	Attitudes of people toward environmental values	Before training	215	35.62	5.107
		After training	215	36.99	4.121

country and any failure will cause destruction of this valuable resource in the near future. Although this fact is known, unfortunately, it has not been the agenda and some researches have approved it. Kalhodashti (2003) studied the content of books in primary level in terms of environment. Her research results showed that considering the volume of lessons, this topic has not received attention in primary school books. Ostovar (2013), studied the awareness and attitude of students and teachers in primary schools of Kish Island to determine their environmental training needs. Obtained results from primary school students revealed that their environmental knowledge is in medium level. Fifth-grade students enjoy higher level of knowledge than fourth-grade students.

Yaghoubi (2003) studying the reflection level of environment-related subjects in school books showed that these books are insufficient and inefficient in terms of contents as well as quality. In recent years, attention of education system has increased due to global importance of this issue and a considerable number of efforts have been made from government side in order to increase environmental awareness of students and teachers to increase environment culture in the society in that contents of school books and extra curriculum trainings are running in different provinces with collaboration of education system and environment protection organization for students and teachers of primary schools. In addition, other trainings are provided by media and in particular television or other

organizations. National project of environment assistant is one of these plans where environment trainings are included for three target groups including schools, universities and societies (all social audiences such as managers, employees, farmers, guilds, industries, women, city and village council members and judges). This plan aims to train various environment topics basically to individuals to change their attitudes, decisions, behaviours and habits. Furthermore, the abilities of these individuals are used to convey environmental information to others in order to internalize environment protection culture in society.

The goal of running this project is to promote level of knowledge, attitude and skills of society members concerning environment affairs approaching development without destruction and its missions are culture domination culture, familiarizing target groups in terms of various environmental issues, increasing social responsibility feeling and attracting participation of target groups for protection of environment, spreading environmental culture and morality and environmentally adaptable life methods among target groups. This project is simultaneously running in different provinces of the country. Since assessing condition of environmental knowledge, attitude and performance of students before and after training, assessing the level of its effectiveness and identifying strengths and weaknesses of this project can be helpful for its improvement in the future, this research studies the level of effectiveness of environment-assistant

Table 4. Results of T-test to compare means of having environmental knowledge in pre-test/post test groups

S. No		Group	Number	Mean	Standard deviation
1	Level of having environmental knowledge	Before training	215	30.05	4.716
		After training	215	32.11	3.863

project on environmental behaviours of students in primary schools in the city of Behbahan in Khuzestan province.

MATERIALS AND METHODS

The goal of this study is to assess the promotion of environmental knowledge, attitude, behaviors and awareness among primary school students in the city of Behbahan after environment training.

Research hypotheses

Environment training is effective on promotion of primary - school students` attitudes toward environment. Environment training is effective on promotion of environmental behaviours of primary-school students. Environment training is effective on promotion of primary - school students` attitudes toward environmental values. Environment training is effective on promotion of environmental knowledge of primary-school students.

Statistical population and sampling method

This research is applied one concerning the goal and it is quasi-experimental research with pre-test and post test groups. Sampling method is counting all numbers and sample size includes total statistical population.

Statistical population of this research includes all fourth, fifth and sixth grade students of 11 primary schools in the city of Behbahan (Touba, Emam Hossein, Bahamn 22nd, Shahed Horiat, Moalem, Nahaee 1, Nahaee 2, Shahed Emam Kazem, Azadeh, Hafez, Shahid Azimi) who received environmental trainings and they were 430 students. Out of this number, 230 pupils were girls and 200 were boys: 53.5 and 46.5 percent of students. There were 112 (26 %) in fourth grade, 162 in fifth grade (37.7 %), and 156 students in sixth grade (36.3 %).

Data collection tool

Research tool was questionnaire designed to study the effect of training on students by the researcher. Questions were designed according to Likert spectrum. This questionnaire included some variables, requesting students to rate their environmental behaviors in eight questions. Having environmental knowledge means individuals level of information regarding environmental issues and identifying their behaviors in order to solve environmental problems operationally; awareness of people includes general information about the importance and role environment in lives which were assessed by seven questions. Attitude of students toward environment and its values are a collection of emotions, tendencies, beliefs and judgments toward one environmental phenomenon or event in life. To assess and measure attitude of students toward environment, eight questions were used.

Table 5. Results of T-test to compare means of student's attitude toward environment in pre-test/post test groups

S. No		Levene test		T - Independent test			
	Attitudes of people towards environment	F-test	Sig. Level	T value	Degree of freedom	Sig. level	Mean difference
1	Equal variance	17.754	0.000	-5.209	428	0.000	-1.88
2	Unequal variance	-	-	-5.209	390.175	0.000	-1.88

Table 6. Results of T-test to compare means of student's behavior toward environment in pre-test/post test groups

S. No		Levene test		T - Independent test			
	Behaviors of people toward environment	F test	Sig. Level	T value	Degree of freedom	Sig. level	Mean difference
1	Equal variance	4.142	0.042	-3.047	428	0.002	-1.73
2	Unequal variance	-	-	-3.047	417.849	0.002	-1.73

Data collection method

Implementation of this research was through the collaboration agreement signed between environment organization, environment activist association and education system of Behbahan. Before training, the questionnaires were distributed among fourth, fifth and sixth grade students. Experimental process was in this way : students were trained in three 45 min sessions by 11 trainers. Students became familiar with environment, its components such as air, water, jungle, as well as importance of its protection and results of pollution and destruction of each them on human and animal lives were discussed. Additionally, prevention methods of destruction for each of these elements and our duties toward them were trained. Trainings were done through power point slides along with childish and attractive images and environmental animations to create more attractiveness and motivation among students which were welcomed. Post test was conducted at the end of training sessions.

Reliability and validity of research tool

Validity of questions was approved through face validity in that research questions were given to some environment authorities and experts (15) and the questionnaire was finalized based on their opinions.

(Bagheri, 2003). Reliability of questions was assessed through Alpha Cronbach coefficient where it was reported 0.845 for dependent variable of environmental behaviors, 0.692 for enjoying environmental knowledge, 0.784 for attitudes of students toward environment and 0.849 for environmental values, approving reliability of assessment tool.

Statistical methods

Data were analyzed using the software SPSS V16 (SPSS, 2017). Data normalization was assessed through Kolmogorov-Smirnov test. Homogeneity of variance was studied by Levene test. To compare variables in two stages of pre-test and post test, T-independent test was used. Confidence level of 95 was considered for all comparisons.

RESULTS

Descriptive findings

Table 1 means of student's attitudes toward environment in pre-test/post test groups. According to the results listed in Table 1, mean of attitude toward environment in pre-test is 36.09 with standard deviation of 4.249 which is higher than that of in post test (37.97). According to the mentioned results in Table 2, mean of behaviors toward environment in

Table 7. Results of T-test to compare means of student's attitude toward environmental values in pre-test/post test groups

S. No		Levene test		T - Independent test			
	Student's attitude towards environmental values	F-test	Sig. Level	T value	Degree of freedom	Sig. level	Mean difference
1	Equal variance	6.329	0.012	-3.055	428	0.002	-1.37
2	Unequal variance	-	-	-3.055	409.688	0.002	-1.37

Table 8. Results of T-test to compare means of students having environmental knowledge in pre-test/post-test groups

S. No	Having environmental knowledge	Levene test		T - Independent test			
		F-test	Sig. Level	T value	Degree of freedom	Sig. level	Mean difference
1	Equal variance	12.820	0.000	-4.956	428	0.000	-2.06
2	Unequal variance	-	-	-4.956	412.006	0.000	-2.06

pre-test is 33.93 with standard deviation of 6.348 and mean of behaviours toward environment in post test is 35.67 with standard deviation of 5.425. Thus, mean of behaviours toward environment in post test is higher than that of pre-test by 1.73.

According to the mentioned results in Table 3, mean of attitudes toward environmental values in pre-test is 35.62 with standard deviation of 5.107 and mean of attitudes toward environmental values in post test is 36.99 with standard deviation of 4.121. Thus, mean of attitudes toward environmental values in post test is higher than that of in pre-test. According to the mentioned results in Table 4, mean of having environmental knowledge in pre-test is 30.05 with standard deviation of 4.716 and mean of having environmental knowledge in post test is 32.11 with standard deviation of 3.863. Thus, having environmental knowledge in post test is higher than that of pre-test by 2.06.

Inferential findings

First hypothesis: Environment training is effective on promotion of primary school student's attitudes toward environment. In this section, according to the data provided, research questions are studied. Based on normal sample distribution approved by K-S test, t-test is used. Table 5 shows the results of t-independent statistical test to compare means of student's attitudes toward environment in pre-test/post test groups. Since Levene test equals 17.754 and its level of significance is less than 1 percent (Sig. = 0.000), the value of t and its significance have been calculated through unequal variance. According to t-test

value (-5.209), freedom degree of d.f = 390, accepting error of less than 0.01 (Sig.= 0.000) and confidence level of more than 99.0, it can be concluded that a significant relationship exists between pre-test/post test groups concerning student's attitudes toward environment. Responding the first hypothesis, the effect of environment training on promotion level of student's attitudes in primary schools of Behbahan, it can be stated that a significant relationship exists between students in pre-test and post test groups and environment training is effective on promotion level of students in primary schools in the city of Behbahan.

Second hypothesis: Environment training is effective on promotion of environmental behaviors of primary-school students. Table 6 shows the results of T-independent statistical test to compare means of student's behaviours toward environment in pre-test/ post test groups. Since Levene test equals 4.142 and its level of significance is more than 5 percent (Sig = 0.042), the value of t and its significance have been calculated through equal variance. According to T-test value (-3.047), degree of freedom at 417, accepting error of less than 0.01 (Sig. = 0.002), and confidence level of more than 99.0, it can be concluded that a significant relationship exists between pre-test/post test groups concerning student's behaviors toward environment so the second research hypothesis is confirmed. It can be stated that a significant relationship exists between environment training and environmental behaviors of students in primary schools in the city of Behbahan.

Third hypothesis: Environment training is effective on

promotion of primary- school student's attitudes toward environmental values.

Table 7 shows the results of t independent statistical test to compare means of students` attitudes toward environmental values in pre-test/post test groups. Since Levene test equals 6.329 and its level of significance is less than five percent (Sig. = 0.012), the value of t and its significance have been calculated through unequal variance. According to t test value (-3.055), freedom degree of d.f. = 409, accepting error of less than 0.01 (Sig. = 0.002) and confidence level of more than 99.0, it can be concluded that a significant relationship exists between pre-test/post test groups concerning student's attitudes toward environmental values. Responding to the third hypothesis, environment training is effective on level of students' attitudes toward environmental values.

Fourth hypothesis: Environment training is effective on promotion of environmental knowledge of primary-school students.

Table 8 shows the results of t independent statistical test to compare means of having environmental knowledge in pre-test/post test groups. Since Levene test equals 12.820 and its level of significance is less than 1 percent (Sig. = 0.000), the value of t and its significance have been calculated through unequal variance. According to t-test value (-4.956), freedom degree of d.f. = 412, accepting error of less than 0.01 (Sig. = 0.000), and confidence level of more than 99.0, it can be concluded that a significant relationship exists between pre-test/post test groups concerning having environmental knowledge. Responding to the fourth hypothesis, environment training is effective on level of having environmental knowledge.

DISCUSSION

All environment components including living and non-living things are interacting with each other and any kinds of pollution lead to destruction or disorder in other parts. Increase in pollution is destroying our Earth. In the last few years, serious measures are being taken in to account to prevent destruction of environment. It has been years in global level that frequent number of programs have been conducted to prevent growing destruction of environment where public participation and trainings have been focused in all of them. Children are future of societies and if this group of societies has high level of environmental knowledge and skills, they will be able to meet their responsibilities concerning environment and they, as future mangers, learn that they need to respect their environment, trying hard to maintain it. Environment training to children, particularly in primary school level, will highly be effective on creation of strong cultural columns in future generation.

Obtained findings in this study showed good effectiveness of training on variables including attitude toward environment, environmental behavior, attitudes toward environmental values and promotion of environmental knowledge of primary-school students at significance level of 0.05. In other words, a significant difference exists between these variables in pre-test and post test, showing good effectiveness of training on environmental information and knowledge of trained students. Obtained results are in agreement with those of other researchers in that conducted studies by Yakhkoshi (2002) and Mir (2008) revealed that student participation in environmental activities have positive effects on environment protection. Esmaeeli (2007) showed that, using environmental magazines and newspapers is effective on students` attitudes concerning environment protection. In this regard, studies conducted by Badkoubi (2000) and Esmaeeli (2007) revealed that informing teachers is effective on attitudes of students concerning environment. Conducted studies by him indicated that taking advantage of practical environmental trainings is

influential on their attitudes. Also, researches conducted by Hadee (2003), Lashgari (2002) and Rad (1995) have shown that level of educational materials in school books is effective on attitude of students which have been confirmed by this study as well. Hadee (2003) have revealed that a positive relationship exists between visits of environment experts from schools and attitudes of students toward environment. Mir (2008) have shown that a positive relationship exists between tendencies of students to create environmental associations and their attitudes toward environment protection. All mentioned issues have been confirmed in this study.

Since school time and in particular primary schools is highly important concerning acquiring information from environment and according to research findings, indicating the difference between environmental knowledge, attitudes and behaviors in pre-test and post test, holding environmental classes and workshops are necessary for students in different levels in primary - school period created through feeling of healthy competition and learning motivation of environmental knowledge and science as well as active presence in training programs by running competitions and giving prizes.

According to the fact that national environment-assistant project is running as the first training project of the country as well as indicating the fact that the main goal of this project is promoting awareness level of people toward environment approaching their attitudes, decisions, behaviors and habits; therefore, attitude changes of individuals in the first step to reach environmental culture, protection of environment and reaching sustainable development, need long-term process. In other words, environmental topics is vast and they require time and organized planning in which training goals cannot be reached by short 120 min training program for students (National environment-assistant project).

Strength point of national project of environment assistant, like other national plans, is training environmental issues to primary school students because childhood is simultaneous with formation of beliefs among people. Thus, focusing the main goal of this project toward this age group, environment and its protection can be internalized as value in their ideas. In addition, promoting awareness level of children as family members can motivate other family members to follow environment protection principles.

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