A Theoretical Framework on Environmental Education in the Primary Schools in Iranian Educational System

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Abstract: The lack of a national plan and suitable model for educating the environment in Iranian educational system (particularly in the primary schools in particular) in terms of the needs of current Iranian society made the researcher conduct the following research activities in order to meet the objectives of his study: we conducted a content analysis on the Sciences book of the primary school in order to determine the implicit and explicit aspects of the books. We found that some materials and contents have not a clear, coherent and consequent expression and thus, they reduce the attention of the students to the environment. Thus, we recommend a more inclusive and more coherent vision on the environmental entries in the science book of the primary students. Considering the classification system of UNESCO, Japan, Germany, Kuwait, Kenya, Malaysia and Venezuela we studied comparatively in order to extract, explain and analyze the goals, policies, planning and methods of educating the environment in the primary schools of the mentioned countries and to compare them to the Iranian educational system. In this process, we managed to formulate a framework for the theoretical model of educating the environment based on the finding of the research. Then we evaluated the model based on the sample size formula $n = Z^2 \times pq\% / d^2$, 384 subjects of the statistical population of the university professors, teachers of the primary schools, experts of the textbooks and experts of the environment were qualitatively studied with Delphi Method. The statistical population replied to the 5 methods of the environmental training. Then using the quantitative study and factor analysis, the 38 methods were reduced to 22 methods and were classified in 6 factors based on their priorities. After the data were described and analyzed, the results of the research were proposed as an exploratory model of educating the environment in the primary schools. Moreover, it is suggested to use the active and live methods such as the group, sensory, perceptual and moral teaching along with the official programming and evaluation of the interaction, administrating the painting, poetry and puzzle competitions and a combination of different pedagogical methods instead of the inflexible traditional methods. The reliability and validity of these methods have been confirmed by the statistical population of different groups.

Key words: Environmental education, exploratory model, interdisciplinary sciences, sustainable development, validity

INTRODUCTION

Nowadays, the concept of sustainable development is being emphasized anywhere, especially in the global conferences on the environment so that, the environment is considered as a leg of a chair whose stability and constancy depends on the stability of its legs. The sustainable development contains four dimensions, including the environmental, economic, social and cultural ones. The term sustainable development is now implicitly implies an environmental concept. Today, the destruction of the environment is regarded as a global crisis of the future that is as threatening as the nuclear threats, progress of the poverty and drug misuses. The protection of the environment against its destruction during the time through the education in order to acquire the knowledge, understanding and serious and due actions against the threatening factors are some effective steps toward fulfilling the sustainable development.

Environmental education used to be referred in the textbooks very limitedly, dispersedly and implicitly or it was defined in the textbook at a very preliminary level. Despite all limitations of the available textbooks in the united nations environmental program, UNESCO has

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defined the environmental education in which one can find the emphasis on acquiring the environmental knowledge and decision-makings that lead to the individual or collective activities for solving the present and future of the problems of environment. The declaration of the mentioned program, not only emphasize on the official educational system which is in responsible for planning and providing the courses and organizing the ordered suitable field of study but it emphasize on the cooperation of the public institutions and mass (printed and digital) media as well.

Environmental education is a process including the interaction of the educational system and the society at large based on the individual interests and the social needs. We studied all available models of the environmental education for the primary schools worldwide. Evaluating each of the models we designed a model whose validity, reliability, accountability and suitability is confirmed by the teachers of the primary schools, university professors and experts of the environment and relevant materials of the text books. This research can be used as an operational guideline for the way of educating the environment in the primary schools and so it can play a role in the educational system of Iran.

Problem statement: Based on the conducted interviews and consultations with the top managers of the Iranian Ministry of Education, environmental organizations, university professors and the teachers of the primary schools, we found that no national program exists currently to formulate and show the ways of educating the environment in Iranian educational system in general and the primary schools in particular. Of course there are some unorganized and dispersed attempts for educating the environment to the students but the effects of such attempts are not reflected in the official textbooks and they cannot meet the educational needs of the students in the information age.

Indeed the gap of a systematic pattern on the environmental education is completely visible in the Iranian primary schools. This gap made the researcher approach the subject and focus on the environmental education in Iranian primary school which is the main period of establishment of the students' personalities. In this regard, we tried to offer a suitable model for the Iranian educational system for reflecting the environment and its problems as an organized field of study in the educational system and the textbooks of the primary schools.

Objectives of the research:
- To study the different models of environmental education in the global educational systems based on their theoretical foundations
- To offer a model of the environmental education for the Iranian primary schools
- To validate the suggested model from the cultural, social, political and educational point of view in Iran

Research questions:
- What model can be extracted from the organized literature of the global educational systems for educating the environment in the primary schools?
- Do the suggested model and its steps are confirmed by the Iranian educational system? Is the suggested model suitable for the socio-cultural values of Iran?

Necessity of creating an environmental educational model: The process of education is fundamentally deals with some goals and conditions and the authorities attempt to meet those goals and conditions in different situations by suitable tools and methods. In order to fulfill these educational goals it is necessary to understand the environment and to take the environmental expectations serious.

Undoubtedly, acquiring the educational knowledge and skills require the human helps his/her environment and prevents its destruction. Optimal use of this life ground and its preserve as the eternal heritage of each country to deliver it to the next generation needs knowledge and actions that is usually formulated in an organized and planned model that has to be reliable, validated and in accordance to the social, political and cultural values of the country. Particularly, with regard to the growing number of the primary students we have to pay double attention to this problem in our researches (Forourechi, 2002).

The environmental educational model of this research was formed by the strategy of thinking global and acting local and we attempted to acquire the needed experiences and match our model with the available global ones and all above, make the model suitable for the culture and mental structure of the Iranian primary students.

Concepts and experiences of the environmental education: The environment refers to a set of things and conditions surrounding the human and both affects and being affected by the human. In a preliminary classification we face the natural environment (including the water, soil, plants, living creatures and social environment) and the artificial environment made by the human (Hart, 1997).

The environmental education is the process of being aware about the actions of the human (through the practical participation of the individuals) in order to prevent the destruction of the environment and to make the exploitation of the environment optimal. In other interpretations, the place of living the creatures is called the nest and the operational role of the individuals in the environment is called niche. Ecology is the knowledge of the mutual relationship and the interaction of the living creatures to each other and their non-living environment (Hashemi, 2004).

Iran is a country with the total area of 1.640.000 km^2 that is approximately equal to England, Italy and Spain. The climatic diversity of this country has resulted in the growth of different vegetation and animals. More than half of the Iranian lands are mountain. Iranian mountains are young and transforming and this characteristic is the main cause of several earthquakes (Kohan, 1997).

Like many other countries, Iran faces several considerable environmental problems such as the destruction of the forests, the extinction of its animal species (resulted from the illegal hunting), limitation of the wildlife habitats, the ruin of the pastures and the reduction of their fertility, overfishing, gradual dryness of the rivers and lakes, over-extraction of the underground waters, etc. The only remedy for such catastrophes is to protect the environment against its further destruction. Fortunately the public participation for the preserve of the water and soil and for having an optimal use of the available resources is considered as a sacred duty in Islam (Karamipour, 2010).

Iranian Organization of Environment was established in 1971. Inspired by the Stockholm global conference in 1974, the organization passed the environmental protection and improvement law. After the Iranian Islamic revolution, study 50 of the constitution confirmed the proper use of the environment in accordance with the sustainable development of the environment (Kohan, 1997).

In historical texts such as the works of herodotus we can find the emphasis on the mutual relationship between the man and his environment. The man builds the environment and use is for the interests of his own and his society and the environment helps the man to be promoted.

American governors had emphasized on the management and development of the environment in the American Declaration of Independence but their readiness for controlling the environment for the human purposes and the need for some formulated policies and environmental educations was accelerated in the second half of the 20th century. As a policy, the environmental theory was first proposed in America, then Europe and then it was generalized in the industrial countries. The public responsibility against the environment was implicit in the public movements and in the public and industrial rules and regulations but there was no clear and explicit formula for the public responsibility against the environment had not been defined until the end of 1960. Up to that time, the public understanding of the environment was mainly regional and professional. Indeed, each organization used to follow its own policy, while this situation was leading to the ruin of the environment. In 1970, the first formula for the public responsibility against the environment was formed in the American society and it was submitted to the American Congress, forming the relevant law on the environment. Consequently, several journals were published on the environment and several conferences were conducted by the United Nations including the Stockholm International Conference, 1972 that emphasized on the managing the human settlement, managing the natural resources, preventing the environmental pollutions, promoting the educational, informational, social and cultural settings, making suitable policies for fighting the malnutrition, poverty, illiteracy and preventing the destruction and pollution of the environment. Other conferences were held each of which proposed new strategies and guideline for protecting the environment against the destruction including the Tbilisi Conference (Hashemi, 2004) and the Jakarta Regional Seminar.

Environmental theories: The theories of environment have systemic concepts and approaches for describing, explaining and controlling the environmental variables. Such theories are indeed the guidelines for the manager's decision-making and actions.

Problematic logical theory: The problem may be a simple one (like the water pollution in a specific geographical region) or it may be a complicated problem (like the increase of carbon dioxide in the atmosphere). According to Allen V. Kneese, the understanding of the problem and the intervention in its organizational adjustment requires a knowledge and action that needs to be taught and learnt.

Kneese believes that the problem of the environmental pollution is more important than the other problems of the environment. This theory forces the students to learn and face the problem and to find the solution (Maleki, 2006).

Human settlement system: This theory encourage the individuals to regional planning and implementation the plans in order to grow and develop the cities in line with the needs of the people and emphasizes on the human settlement for preserving the health of human and using the houses for the human longevity and on the education as a very important factor for improving the homeland of the people.

Theory of ecosystem: Ecosystem encompasses a set of the living sections (animals, plants, microbes, etc.), non-living sections (e.g., the spaces, physical materials, chemical materials) and their interactions and mutual effects on each other. The structure and performance of these sections can be studied. The protection of these living and non-living creatures and the responsibility for preserving them requires the official educations in the primary schools. The human is social by nature and he is able to learn. The interaction between the teacher, students and the environment plays a critical and fundamental role in educating the environmental knowledge and action. The promotion of the teacher's personal knowledge and his understanding of the learners besides the analysis of the global and environmental knowledge can accelerate finding a solution for the environmental problems (Maleki, 2006).

MATERIALS AND METHODS

This is a descriptive-sectional study with university professors, environment experts, textbooks experts and teachers are known as its analysis subjects.

The researcher, using the World Wide Web (www), provides a review about studies on education and teaching environment. Most methods for teaching environment to students are based on Delphi technique. Quality analysis on teaching environment to elementary students has been done after analyzing the contents of the textbooks. After data collection and classifying the study, a questionnaire containing 38 questions were provided. Content and formal validity were discussed by experts in order to revise the questionnaire. Elementary study was done to check the stability of the questionnaire and stability coefficient was also determined (r = 70%). Applying non-probability and convenience sampling method and using the following equation:

$$n = \frac{Z^2 pq\%}{d^2}$$

The 348 professors, environment experts, textbooks proffessionals and elementary school teachers were selected for qualitative study and 96 persons dealing with educational issues were selected out of them. Data description and analysis were done by Ep1-INFO.

Available statistical population: The population which can be generalized by the researcher is called available population which is containing professors, teachers, environment and textbook experts in this study, since we dealt with education and environmental issues.

Sample size and sampling method: Sample size were obtained by EPI-inf 0 with 95% confidence and error EPI = 5% which is equal to 384 persons (Estimation of average ratio was assumed to be 0.5).

In order to prevent from sampling error, the confidence for above society were assumed to be 0.95). Statistical calculation for determining sample size base on the formulation:

$$n = \frac{Z^2 pq\%}{d^2}$$

$$n = \frac{(1/96^2) \times (5 \times 5)\%}{(5\%)^2} = 384$$

The 384 people were selected for qualitative study. The 96 people dealing with educational and environmental issues were chosen out of them to finalize the qualitative study. The 21 of them did not return the questionnaire, while 75 of them filled it on time. Data in this research were collected after determining research area (educational system, university and environment organization) by non-probabilistic and simple sampling techniques.

The researcher applies World Wide Web (WWW) and reviews other findings on teaching environment by Delphi technique in order to reach his/her goals and answering the research questions.

In this method, the researcher provides 5 questions entitled "How to teach environment to elementary school students?" to asking experts and receive their solutions which are according to group interaction, practical and logical methods and based on existing techniques. After data collection which contains 38 factors, a final questionnaire was designed. Index priorities were determined between 1-7.1 means weak while 7 shows high priority.

Validity and stability of date collection tool: When the final questionnaire was designed, content and formal validity of it were confirmed by capable people (professors, environment experts, textbooks experts and elementary school teachers). The questionnaire has the degree of internal consistency (Cronbach alpha) equal to 70% (Forourechi, 2002).

Statistical methods
Factor analysis: Factor analysis is a statistical method that shows the relationship between a set of interrelated

variables. In this research, we have used a series of the statistical methods whose goal is to simplify the series of complicated data. Factor analysis is able to reduce the number of the variables. In factor analysis we assume that we can use some factors for explaining the complicated phenomena. The correlation between the variables is the result of these factors. In this study, we specified the correlation between the scores of different methods of the environmental education in 6 factors. This analysis followed four steps:

- First, we calculated the correlation matrix for all variables. In this step, non-related variables were determined from the matrix and consequently they were removed from the further analyses
- The second step was to extract the factors. The number of the needed factors was determined for showing the data and the method of their calculation. In this study, we extracted the main factors by principle component analysis
- The third step was to rotate the factors in order to come to a better interpretation of them. In this study, we used Varimax method for factor rotation
- The final step was to obtain the scores of each factor. after this process, 6 factors were specified and their relationship with the methods of environmental education was determined

Other statistical methods: In this research, we used EPi-Info as the statistical software for our data analysis. Moreover, the data were analyzed by SPSS windows and the one-way variance analysis of the Bartlett test was conducted (Bartlett test is used for determining the equality of the variance in the statistical population). Moreover, we used non-parametric tests for determining the equality of the variance in the statistical population.

After conducting the research and collecting the statistical information we began to analyze the data in order to realize the starting grade for the educational prerequisites, curriculum planning, trainer, methods of changing the attitudes and the unofficial educational media for the primary students (Peters, 2010).

RESULTS AND DISCUSSION

Data description and analysis: By implementing the methodology of the research through the qualitative and quantitative studies and using Delphi Method and statistical factor analysis, different methods of environmental education in the primary school were determined in 6 factors. In this study, we describe and analyze the data. In each table, the majority of subjects of analysis in the statistical population are determined and

the beginning point, textbook, change of attitude, teacher and subsidiary trainings are suggested in different tables as the prerequisite of the environmental education in the primary schools. Moreover, beside the official trainings that are confirmed in the findings of the research, unofficial trainings are confirmed as the supplement for the official classes as well. Table 1 shows that the majority of the analysis subjects is formed by the teachers (56.7%). As shown in Table 2, the majority of the analysis subjects (86.5%) have confirmed that the grade 1 of the primary school is the best grade for starting the environmental education.

Since, the requisite for the health is to be familiar with the health and moral issues, thus the majority of the analysis subjects (78.4%) admitted that the health education is the prerequisite of the environmental education in the primary school.

Since, teaching the environmental lessons is very important in the curriculum of the primary grades, thus, the above table was designed. This table shows that the "science" is the best curriculum for presenting and teaching the environmental concepts to the primary students.

The trainer plays a very important role in educating the environment to the students. In this study, the majority of the analysis subjects (29.6%) believed that the textbook is the best trainer (Table 3-5).

Table 1: Distribution of the absolute and relative frequency of the analysis subjects in terms of the occupation

Occupations	No.	%
University professor	17	29.0
Teacher	42	56.7
Expert of the textbooks	7	9.5
Environmental expert	8	10.8
Total	74	100.0

Table 2: Distribution of the absolute and relative frequency of the analysis subjects in terms of the starting grade of environmental education in primary school

Grades	No.	%
1	64	86.5
2	1	1.4
3	7	9.5
4	-	-
5	2	2.7
Total	74	100.0

Table 3: Distribution of the absolute and relative frequency of the analysis subjects in terms of needed trainings before starting the environmental education

Type of training	No.	%
Health	58	78.4
Moralities	7	9.4
Nature	8	10.8
Arts	-	-
Cultural issues	1	1.4
Social issues	-	-
Total	74	100.0

Table 4: Distribution of the absolute and relative frequency of the analysis subjects in terms of adding the environmental education in the curriculum of the primary school

Curriculum	No.	%
Science	59	79.6
Mathematics	3	4.1
Social sciences	5	6.8
Health	6	8.1
Arts	-	-
Language and literature	-	-
Other	1	1.4
Total	74	100.0

Table 5: Distribution of the absolute and relative frequency of the analysis subjects in terms of the trainer

Trainers	No.	%
Parents	21	28.4
Principal	14	18.9
School master	3	4.1
Teachers	13	17.6
Textbooks	22	59.6
Health staff	1	1.4
Total	74	100.0

Table 6: Distribution of the absolute and relative frequency of the analysis subjects in terms of methods of changing the students' attitude to the environment

Methods	No.	%
Group discussion	33	44.5
Role modeling	26	35.1
Field experiences	10	13.5
Home works	3	4.1
Other	2	2.8
Language and literature	-	-
Other	1	1.4
Total	74	100.0

There is a relationship between the students' awareness and the change in their attitudes. There are several methods for increasing the awareness of the students and change their attitudes. Majority of the subjects believe that the "role modeling" and "group discussion" (44.5 and 35.1%, respectively) are the best methods for changing the attitudes of the students about the environment in the primary schools.

According to the findings of this research, among the unofficial trainings, TV and radio is the more important device for environmental education of the primary students (Table 6-9).

Based on the Table 10 we can conclude that there is a significant difference between the methods of environmental education in the primary school and the occupational situation of the analysis subjects. The highest mean belongs to the lecture relating to the textbook experts. On the other hand, in the "story-telling" and "game, puzzle and entertainment" methods, there is a significant difference between the textbook experts and other groups. Moreover, the textbook experts gave the

Table 7: Distribution of the absolute and relative frequency of the analysis subjects in terms of unofficial trainings of the environmental education in primary schools

Unofficial training	No.	%
Newspapers and magazines	10	13.5
TV and radio	52	70.3
Educational posters	10	13.5
Others	2	2.7
Total	74	100.0

Table 8: Distribution of the relative frequency of responses offered by the subjects for the way of the environmental education in primary schools

Questions	1	2	3	4	5	6	7
Pictures and suitable teaching aids	9.5	1.4	4.1	4.1	10.8	12.2	58.1
Field trip	6.8	5.4	4.1	12.2	14.9	13.5	43.6
Direct observation	5.4	6.8	4.1	2.7	10.8	21.6	48.6
Movie presentation	5.4	5.4	5.4	6.8	24.3	21.6	31.5
Q and A	8.1	18.9	24.3	20.3	20.3	9.5	31.9
Field methods	6.8	14.9	10.8	21.6	17.6	16.2	14.9
Content analysis	8.1	10.8	14.9	20.3	16.2	14.9	12.2
Scientific participation	5.4	2.7	5.4	8.1	18.9	36.5	14.9
Comparative method	6.8	5.4	6.8	17.6	27.9	23.0	10.8
Lecture	28.4	21.6	18.9	9.5	4.1	5.4	12.2
Laboratory method	6.8	9.5	13.5	8.1	20.3	25.7	16.2
Free discussion	4.1	6.8	16.2	28.4	14.9	10.8	18.9
Group project	5.4	5.4	18.9	9.5	32.4	16.2	12.2
Cognitive method	10.8	14.9	21.6	14.9	18.9	10.8	8.1
Using mass media	4.1	8.1	6.8	9.5	23.0	18.9	29.7
Scientific research	5.4	13.5	17.6	10.8	17.6	20.3	14.6
Story-telling by live examples	10.8	2.7	5.4	14.9	18.9	20.3	21.0
Official education and evaluation	5.4	13.5	13.5	12.2	14.9	12.2	18.4
Using the models	5.4	9.5	12.2	13.5	16.2	31.1	12.2
Sensory-perceptual-moral method	4.1	2.7	9.5	20.3	23.0	21.6	18.9
Group teaching	6.8	5.4	16.2	20.3	18.9	21.6	10.8
Painting, poetry and photography competitions	5.4	9.5	8.1	21.6	13.5	23.0	18.9
Game, puzzle and entertainment	4.1	12.2	12.2	16.2	18.9	20.3	16.2
Dramatic method	5.4	10.8	9.5	10.8	20.3	23.0	20.3
Problem-solving teaching	8.1	6.8	6.8	14.9	27.0	17.6	18.9
Motivating by positive words	13.5	10.8	18.6	16.2	13.5	16.2	12.2
Information gathering	8.1	9.5	16.2	21.6	25.7	14.9	4.1
Family training	6.8	6.8	9.5	9.5	16.2	28.4	23.0
Environmental exhibit	6.8	8.1	13.5	17.6	28.4	12.2	13.5
Theorization	9.5	18.9	9.5	24.3	29.7	6.8	1.4
Rational reasoning	8.1	12.2	10.8	21.6	29.7	13.5	4.1
Interaction	6.8	6.8	14.9	18.9	17.6	20.3	14.9
Mastering	6.8	6.8	18.9	20.3	17.6	10.8	18.9
Teachers' in-service training	5.4	4.1	17.6	9.5	14.9	23	25.7
Official and unofficial education	5.4	9.5	9.5	23	12.2	16.2	24.3
Implicit training	2.7	13.5	20.3	16.2	24.3	20.3	2.7
Inductive learning	5.4	9.5	27	24.3	21.6	11	4.1
Explanatory learning	13.5	17.6	14.9	18.9	20.3	8.1	6.8

least score to the information gathering method, while the teachers gave the highest score to this method of environmental education.

Research model: The theoretical and statistical findings of the research enabled us to achieve an exploratory model that is called the exploratory model of the

Table 9: Variance analysis of the mean scores of the educational methods in terms of the occupational situation

Questions	F-statistic	Mean	p-values	Bartlett test	p-value of Bartlett test
Pictures and suitable teaching aids	0.80	5.8	0.400	2.500	0.40
Field trip	1.10	5.4	0.300	0.340	0.90
Direct observation	0.60	5.9	0.500	3.600	0.30
Movie presentation	0.55	5.5	0.600	3.200	0.30
Q&A	1.00	4.3	0.900	0.030	0.90
Field methods	0.80	0.4	4.400	1.200	0.70
Content analysis	0.90	4.2	0.400	0.080	0.90
Scientific participation	1.60	5.5	0.900	7.500	0.05
Comparative method	1.00	4.7	0.300	1.400	0.60
Lecture	3.80	3.0	0.010	3.400	0.30
Laboratory method	0.10	4.9	0.900	0.700	0.80
Free discussion	2.00	4.6	0.100	1.800	0.50
Cognitive method	1.10	4.0	0.300	3.800	0.20
Using mass media	0.70	5.3	0.500	1.300	0.70
Scientific research	0.90	4.4	0.400	3.800	0.20
Story-telling by live examples	4.20	5.0	0.008	2.600	0.40
Official education and evaluation	1.80	4.7	0.100	2.300	0.40
Using the models	0.50	4.7	0.600	0.400	0.90
Sensory-perceptual-moral method	0.20	5.1	0.800	3.600	0.20
Group teaching	0.60	4.4	0.500	3.400	0.30
Painting, poetry and photography competitions	0.80	4.9	0.400	1.30	0.70
Game, puzzle and entertainment	3.50	4.6	0.010	3.500	0.30
Dramatic method	0.60	4.9	0.500	5.500	0.10
Problem-solving teaching	0.20	4.8	0.400	2.900	0.40
Motivating by positive words	1.20	3.9	0.200	3.300	0.30
Information gathering	3.90	4.1	0.010	1.100	0.70
Family training	0.50	5	0.600	1.600	0.60
Environmental exhibit	0.50	4.6	0.600	0.900	0.80
Theorization	0.70	3.7	0.500	2.800	0.40
Rational reasoning	0.70	4.1	0.500	1.400	0.60
Interaction	2.40	4.4	0.070	0.500	0.90
Mastering	2.10	4.3	0.100	2.700	0.40
Teachers' in-service training	0.40	5	0.700	0.400	0.90
Official and unofficial education	0.90	4.8	0.400	4.400	0.20
Implicit training	0.90	4.2	0.400	1.900	2.50
Inductive learning	1.30	3.7	0.200	5.900	0.10
Explanatory learning	0.60	3.6	0.500	3.000	0.30

Since the variances are not equal we used Kruskal-Wallis H-test that is the equivalent of the chi-square test; Kruskal-Wallis H (equivalent to Chi-square) = 6.3; p-value = 3 and df = 3

Table 10: Variance analysis of the mean of the questions in terms of the occupation

Questions	University prof.		Teacher		Text book expert		Environmental expert		F-statistic	p-values
	Mean	Variance	Mean	Variance	Mean	Variance	Mean	Variance		
Lecture	3.5	5.5	2.5	2.6	5.0	5.0	3.0	4.0	3.8	0.010
Story-telling	5.7	2.5	4.3	3.6	6.4	1.2	5.3	3.9	4.2	0.008
Game, puzzle, entertainment	4.5	3.0	4.1	2.7	6.2	0.9	5.2	4.5	3.5	0.010
Information gathering	3.7	2.5	4.5	2.3	2.5	1.6	3.7	1.3	3.9	0.010

environmental education. Considering the qualitative and quantitative studies and the statistical operations, we classify the methods of the environmental education of our model in 6 factors. The priority of the combinatory methods is as follows:

- Sensory-perceptual-moral method, group teaching, interaction and comparative and mastering methods
- Official and unofficial education along with conducting the painting, poetry and photography competitions, group games, puzzles and in-service trainings of the teachers in order to educate the students of the primary schools

- Using the teaching aids such as the pictures and posters along with the lectures, scientific field trips and direct observations (Fig. 1)
- Motivating the students by the positive words and gathering the information on the environmental education for the primary students
- Field learning and analyzing the contents in order to make the students familiar with the ecosystems, lands and waters
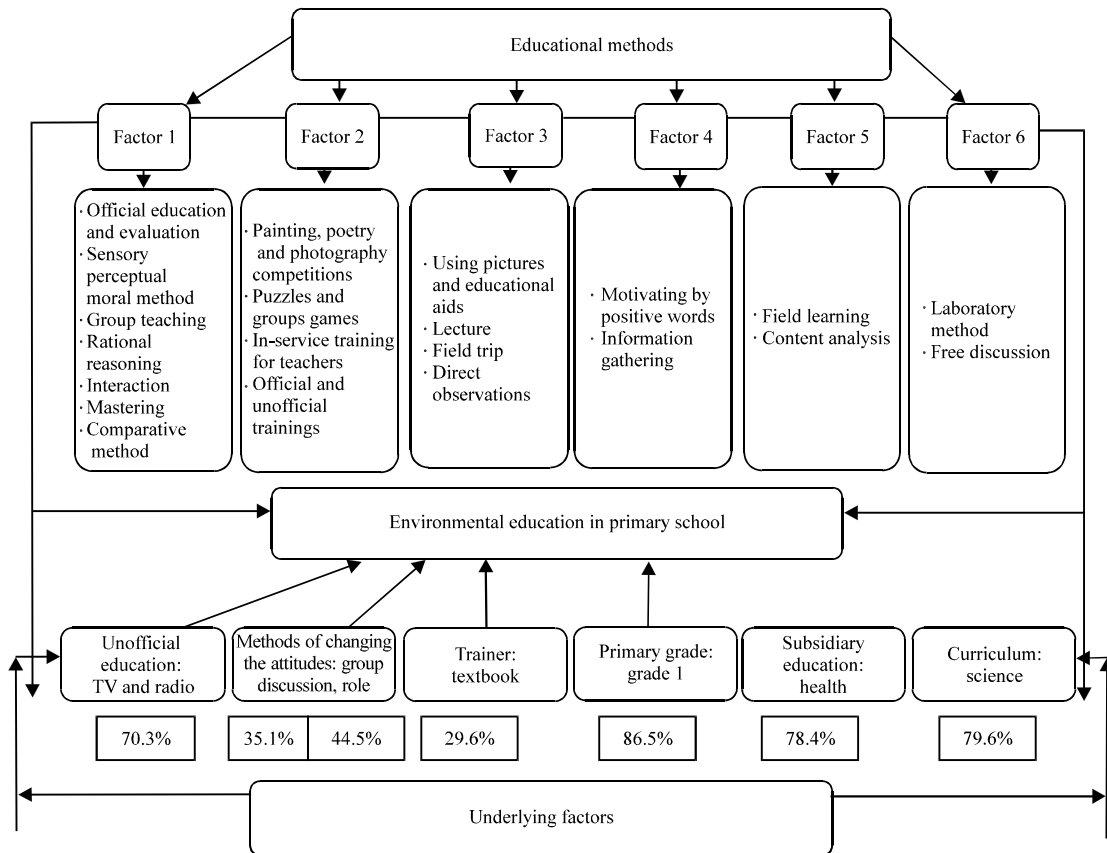- Laboratory methods and free discussions

Fig. 1: Exploratory model of the environmental education in primary school

CONCLUSION

The final findings of this research is presented as the exploratory model of teaching the environment in the primary schools along with its relevant teaching methods and its background factors whose validity has been confirmed by the teachers, professors and experts of the environment and teaching materials. We hope this research prepares settings for application of the suggested model in Iranian educational system for the primary schools.

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