



A comparative survey of environmental education goals between the UNESCO framework and 10th grade Palestine curriculum

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Abstract

The present research, being one string of the Environmental Education (EE), aims to study, and analyze EE objectives in the Palestinian 10th grade textbook from an international point view, namely: to conduct a comparative survey of environmental education goals between the UNESCO framework and 10th grade Palestine Curriculum. To achieve this aim, the researcher refers to the UNESCO framework as a standard tool of EE, then analyzes the Palestinian 10th grade textbook in light of this tool. The finding of the research indicated that there are partial consistency between the UNESCO EE, and Palestinian 10th grade textbook in two levels of objectives (2 and 3), while there is no match on the other two levels of objectives (1 and 4), on the light of these findings the researcher recommends to policy makers, and the Palestinian writing team of the Environmental Education Curriculum to reform objectives on the light of international trends toward Environmental Education.

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1. Introduction

Environmental Education (EE) has been developing many years ago. Moreover it was considered as continuous process of outdoor education, and to respond to the world's growing awareness about environmental problems. Thus EE has become an important school curriculum around the globe.

EE refers to organized efforts to teach about how natural environments function and, particularly, how human beings can manage their behavior and ecosystems in order to live sustainably. The term is often used to imply education within the school system, from primary to post-secondary.

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However, EE is sometimes used more broadly to include all efforts to educate the public and other audiences, including print materials, websites, media campaigns, etc. Related disciplines include outdoor education and experiential education (Borah, 2007).

Mainstreaming environmental issues has been identified as a major goal of the Palestinian education system. In association with the Ministry of Agriculture, the Ministry of Education has incorporated issues such as biodiversity into the national curriculum, to raise awareness of the problems facing the environment and to highlight solutions (Communications Office of the United Nations Development Program, 2005).

The Palestinian national curriculum is one of the only in the Arab world that teaches environmental studies within the core curricula. It is not only in the core textbooks; it also cover some concepts related to the environment in the science subjects, from grades 1 to 12. Also it encourages the children to keep their land clean and respect Palestine's rich history and heritage. The Ministry of Education is very concerned with promoting environmental issues as a commitment for the future (Communications Office of the United Nations Development Program, 2005).

2. Definition of terms

It is useful to begin this research by defining the most important concepts and terms that will be used in this study, so the researcher will define Environmental education, Environmental Education Focuses on, Outdoor Education, Experiential Education, Stockholm Declaration, The Belgrade Charter, and The Tbilisi Declaration.

2.1. Environmental education (EE)

There are many definitions of the term EE, but the most important one was given by UNESCO: "Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action" (Borah, 2007).

2.2. Environmental Education Focuses

According to UNESCO, environmental education emphasizes these themes: Awareness and sensitivity about the environment and environmental challenges. Knowledge and understanding about the environment and environmental challenges. Attitude concern for the environment and help to maintain environmental quality. Skills to mitigate the environmental problems. Participation for exercising existing knowledge and environmental related programs.

2.3. Outdoor Education

Outdoor Education means learning "in" and "for" the outdoors. It is a means of curriculum extension and enrichment through outdoor experiences (Environmental Management Programs Director, 2015). Environmental education is often taught or enhanced through outdoor experiences. The out of doors experience, while not strictly environmental in nature, often contain elements of teaching about the environment.

3. Experiential Education

This is “a process through which a learner constructs knowledge, skill, and value from direct experiences” (Environmental Management Programs Director, 2015). Experiential education can be viewed as both a process and method to deliver the ideas and skills associated with environmental education.

3.1. Stockholm Declaration

Officially known as - The Declaration of the United Nations Conference on the Human Environment (Giolitto, Mathot, Pardo and Vergnes, 1997) .The document was made up of 7 proclamations and 26 principles "to inspire and guide the peoples of the world in the preservation and enhancement of the human environment.”

3.2. The Belgrade Charter

The Belgrade Charter was the outcome of the International Workshop on Environmental Education held in Belgrade, Serbia (Giolitto, Mathot, Pardo and Vergnes,1997). The Belgrade Charter was built upon the Stockholm Declaration and adds goals, objectives, and guiding principles of environmental education programs. It defines an audience for environmental education, which includes the general public.

3.3. The Tbilisi Declaration

The Tbilisi Declaration: noted the unanimous accord in the important role of environmental education in the preservation and improvement of the world's environment, as well as in the sound and balanced development of the world's communities (Auer, 2010).The Tbilisi Declaration updated and clarified The Stockholm Declaration and The Belgrade Charter by including new goals, objectives, characteristics, and guiding principles of environmental education.

4. EE goals

EE goals have received serious consideration from many countries, and international councils, for example the European Resolution on EE set the following goals:

“to increase the public awareness of the problems which exist in the field , as well as possible solutions , and to lay the foundations for a fully informed and active participation of the individual in the protection of the environment and the prudent and rational use of natural resources. (Giolitto, Mathot, Pardo and Vergnes, 1997).

Giolitto, Mathot, Pardo and Vergnes (1997) conclude the following aims of EE in different countries of European Union:

1. The transmission of knowledge.
2. The creation of new behavior patterns.
3. The development of values, attitudes and skills necessary to protect and improve the environment.
4. The development of awareness of the necessity to protect nature and the environment and of the complexity of the both the environment and the interactions between man and nature.

Similar goals set by the U.S.A such as developing the issue of responsible citizenry, educating citizens who protect the environment, and feel their responsibility to do so, as one of the main goals of environmental education in American (Hoody, 1995).

Moreover, NAAEE’s Excellence in Environmental Education – Guidelines for learning (K-12), mentioned the major goals of EE:

“EE should help learners to develop questioning and analysis , knowledge of environmental processes and systems, skills necessary for understanding and addressing environmental issues and personal and civic responsibility (The national American Association for Environmental Education,1999) ”.On the other hand, UNESCO sets the following EE goals, as shown in table 1 (UNESCO, 1994).

Table 1. UNESCO Goals of EE

Goal level	Sub –goals
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Goal Level I: The Ecological Foundations Level	<ol style="list-style-type: none"> 1. Communicate and apply the major ecological concepts 2. Apply a knowledge of ecological concepts to the analysis 3. Apply a knowledge of ecological concepts in predicting the ecological consequences of alternative solutions to environmental problems. 4. Understand the principles of ecology 5. Apply a knowledge of ecological concepts.
Goal Level II: The Conceptual Awareness Level	<ol style="list-style-type: none"> 6. Understand and communicate how man's cultural activities (e.g., religious, economic, political, social and others) influence the environment from an ecological perspective 7. Understand and communicate how an individual's behaviors impact on the environment from an ecological perspective 8. Identify a wide variety of local, regional, national and international environmental issues and the ecological and cultural implications of these issues 9. Identify and communicate the viable alternative solutions available for remediating crucial environmental issues as well as the ecological and cultural implications of these various solutions 10. Understand the need for environmental issue investigation and evaluation 11. Understand the roles played by differing human beliefs and values 12. Understand the need for responsible citizenship action 13. Identify and describe a wide variety of successful local, regional, national, and international sustainable development scenarios.
Goal Level III: The Investigation And Evaluation Level	<ol style="list-style-type: none"> 14. Apply the knowledge and skills needed to identify and investigate issues 15. Demonstrate the ability to analyze environmental issues 16. Demonstrate the ability to identify alternative solutions for important issues 17. Demonstrate the ability to evaluate alternative solutions and associated value 18. Demonstrate the ability to identify and clarify personal values 19. Demonstrate the ability to evaluate, clarify, and change value positions in light of new information 20. Demonstrate the ability to analyze a variety of successful sustainable scenarios.
Goal Level IV: The Environmental Action Skill Level	<ol style="list-style-type: none"> 21. Demonstrate a competence with a variety of citizenship action skills 22. Evaluate selected actions in light of their ecological and cultural implications 23. Demonstrate the ability to apply one or more citizenship action skills.

In conclusion the UNESCO EE goals are more suitable for this research for the following reasons:

- 1) It is a more comprehensive and holistic perspective.
- 2) It has coherence in its goals, and sub -goals.
- 3) It was approved internationally.
- 4) The researcher assumes all countries adopted it in their EE.

Thus, the researcher decided to include these goals, and sub-goals in his current study to compare the goals in 10th grade of the Palestinian textbook of environment.

5. Models OF EE

In the previous topic I mentioned the goals of EE from different point of view, now the question is “how to implement these goals?”, so we need an effective model to achieve the goals of EE.

Reviewing EE literature I found tens of models, but I will briefly mention the most famous of them:

- A 3-dimensional model (Palmer, 1998), the major aim of this model is to develop knowledge about the natural system using research approach.
- A model of EE by (Giolitto et al, 1997), which consists of three core issues, namely: cognitive, ethical, and action.
- A linear model of EE by Sterling and Cooper, 1992). This model began with awareness then understanding and knowledge, skills, attitude and values, and finally action.
- A model of elements of EE by (Klimov and Ukolov ,1994). Which contains four issues: cognitive element, values, normative element, and action element.
- A dynamic model of EE adopted from (Palmer, 1998). Its core includes formative influences which depend on knowledge, skills, and values which will form environmental ethics and awareness.

So from the previous review of EE models we can define some common ideas between them such as environmental awareness and cognitive development, while we can also define some different ideas such as dynamic and static models.

5.1. What is the EE model in 10th grade of the Palestinian textbook on the environment?

After reviewing this book (Palestinian Ministry of Education, 2011). The researcher deduced the following important finding:

- It is focused on the cognitive approach.
- It is descriptive.
- It focused on the international environmental problems such as global warming, ozone, and acid rain.
 - It has problem solving approach.

On the other hand, the book lacks the following issues: research approach, experimental, dynamic, and more enrichment EE materials. Moreover, there are numerous ways Palestinian students can learn about the environment in which they live. Experiential lessons in the school yard and field trips to are most effective and promote a holistic model, using sustainable practices in the classroom and school grounds and encouraging students and parents to bring environmental education into their home.

Review of research in EE

The researcher reviewed the research literature in EE, and he had found different approaches, such as the environmental literacy component, affective attributes, ecological knowledge, socio-political knowledge, knowledge of environmental issues, cognitive skills, additional determinants, and responsible behaviors. So the researcher narrowed the focus to research that related to this study.

Blum (1987) analyzed the results of the survey of environmental knowledge and attitude in four European countries, and came to the conclusion that 9th and 10th grade students have low environmental knowledge. Meanwhile, Brody (1996) assessed the 4th, 8th, and 11th grade students' science knowledge related to Oregon's marine resources. The students tested showed understanding of concepts such as energy, nutrients and food webs. Gambro and Switzky (1996), found a small increase in environmental knowledge from grades 10th to grade 12. Finally, Arrasmith (1995) conducted research at Northwest Regional Educational Laboratory, and found about 75% of Washington schools offer environmental education to 3rd to 8th grade students.

6. Environmental education in Palestinian textbooks

Teaching and learning EE in Palestinian schools begins in 7th grade until 10th grade with two sessions per week. All textbooks that contain EE mixed with other topics such as health, so the title of EE textbooks have the name "Health and Environment".

Before the launch of the national curriculum in the 2000/2001 academic year, teachers taught environmental studies from textbooks that used examples of foreign environmental issues. It was deemed fundamental for students to relate to the issues facing their indigenous environment and accordingly, an environment related course was developed and launched as part of the national curriculum in 2000.

One of the main features of EE curricula was to introduce a new subject called 'The Science of Health and the Environment' as an elective in years 7 to 10. The Palestinian Ministry of Education has produced four textbooks relating to the environment, which were taught in 2005 to a total of around 450,000 students each year and currently 60% of students in Years 7 to 10 are enrolled in the course. This is having a wide-reaching impact not only on the children, but entire communities as well. In addition to class time, schools also offer complementary activities including agro-biodiversity clubs and projects such as the upkeep of school gardens and school clean-ups. Other subjects also complement the core environment curriculum, such as National Education, which specifically highlights national environmental issues with campaigns such as 'Keep Palestine Green,' and in Civic Education, students are encouraged to respect the environment and not to damage Palestinian natural heritage. Additionally, environmental summer camps are held annually.

In association with the Global Environment Facility (GEF), UNDP/PAPP has provided support to curriculum development with an environmental perspective. Given that diversity within the Palestinian environment is constantly declining due to a range of issues such as environmental degradation and over-cultivation of natural rangelands, educating the young about these issues is seen as essential. One of the main components of the GEF program in Palestine is building public awareness through the education system. It is seen as key to promote concepts of agro-biodiversity and biodiversity within schools and universities, so that they become part of the mainstream and accepted as the responsibility of all (Communications Office of the United Nations Development Program, 2005).

7. The problem statement

As Palestine's commitment to addressing key problems grows, the consistency between the content in the environmental book of the Palestinian 10th Grade of Health and Environment, and UNESCO framework on EE, needs to be investigated. The research questions are:

- 1) What environmental education topics are there in the environmental book of the Palestinian tenth grade?
- 2) What environmental education topics are there in the environmental education published by Palestinian 10th grade compared by UNESCO?
- 3) What kind of similarities and differences exist between the two?

7.1. Research hypothesis

To answer the previous question, the researcher formulated the following null hypothesis (which may be accepted or rejected):

- 1) The environmental textbook for the Palestinian 10th grade has broad topics that covered environmental education globally.
- 2) There is significant similarity (or differences) between environmental education issues of 10th grade Palestinian textbook, and UNESCO framework goals.

7.2. Aim of this research

The present research is design to detect the relationship between the content in the environmental book of the Palestinian tenth grade and UNESCO framework, so the aim of this research is:

- To understand environmental education issue as presented in the Palestine textbook.

- To compare environmental education issues in Palestine textbook , and UNESCO documents of the same issues i.e. to reveal the similarity, and difference of this topics , so we encourage similarity and include missing environmental objectives in 10th grade textbook
- To raise awareness of most important topics on environmental subjects.

7.3. Research design

The researcher will conduct content analysis of the environmental book of the Palestinian tenth grade in light of UNESCO Educational Environment framework, which has four major general domain (levels), and each level has sub- goals.

7.4. Health and Environment in our Life, Grade 10.

I will review the book including the most important features such as content, message, approach, relevance to Palestine, and theoretical and practical contents, then comparing the results of content analysis (on the domains of objectives) with UNESCO framework of EE.

7.5. General overview of content

The table of contents in the Palestinian textbook consists of seventh chapters; chapter four and chapter five deal with environmental issues, the rest of chapters deal with health. Chapter four contains two sections, the first about environment and development, while the second deals with society and environment. Chapter five contains pure environmental issues, namely: global warming, ozone depletion, acid rain, and soil erosion.

7.6. Message of EE in Palestinian 10th grade textbook

The message of these chapters directed students in this manner: “please think globally to resolve environmental problems” so the textbook uses a problem solving approach in dealing with environmental problems through the following steps:

- 1) Environmental problems and issues
- 2) Characteristics of environmental problems
- 3) Characteristics of environmental issues
- 4) The role of human beliefs in issues
- 5) The role of human values in issues
- 6) Identifying the issue
- 7) Analyzing belief statements for underlying values

8) Presenting examples (models) of issues which have been analyzed.

8. Research results

This research part will present the results of content analysis based on the UNESCO framework of EE were used to analyze the Palestinian 10th grade content. It gives the comparisons of objectives for two of them through tables followed by results and comments from researcher.

8.1. Analysis of content in depth

First of all, I would like to present the content analysis of the whole book including environmental, and no environmental topics as on the following table:

The book contains the following issues, as indicated in Table 2.

Table 2. 10th Grade content analysis

Chapter number	Chapter name	Content of chapter
1	Health of family and society	Life stages. Characteristic of childhood. Unconscious urination. Family organization. Social roles and its effect.
2	Infection diseases	Tuberculosis. Viral Hepatitis. HIV/AIDS HIV/AIDS transmission
3	Healthy food	Food contamination and spoilage. Food preservation. Cooking. Dining etiquette and table manners. Applications.
4	Environment and development	Environment and development. Environment and society.
5	Global environmental issues	Global warming. Ozone depletion. Acid precipitation. Soil erosion.
6	First Aid	Fractures and sprains and treatment methods Suffocation Epilepsy Blood donation is the duty of humanitarians
7	Clothing and sewing	Chosen a clothes Sewing, and Hand sewing stitches

From the above table we can derive the following finding: The majority of the content was about health, and the minority of content about environment as the following Figures indicates.

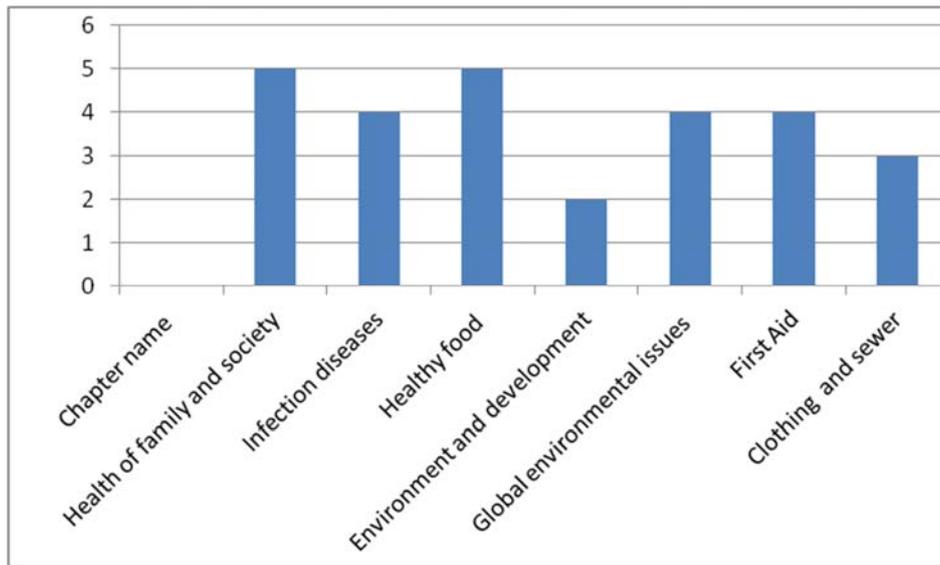


Figure 1. The content amounts on 10th grade textbook of EE

The columns represent the number of subtopics of each chapter, so the total numbers of sub topics in the environmental equal to 6 compared to 19 topics on health issues, so the content needs more prototype environmental issues such as the following proposed topics:

Ecology, Energy , Green plants as the basis, Water and Allied Problems, Food Production and Hunger, Protecting species , Air Pollution, Waste water treatment , Noise Pollution, Solid Waste Disposal, Economic development and population changes, Citizens' response to issues and their effects, and so on.

8.2. The percentage weight of environmental contents on the book

From the above analysis we can summaries the environmental and no environmental issue by the following Figures.

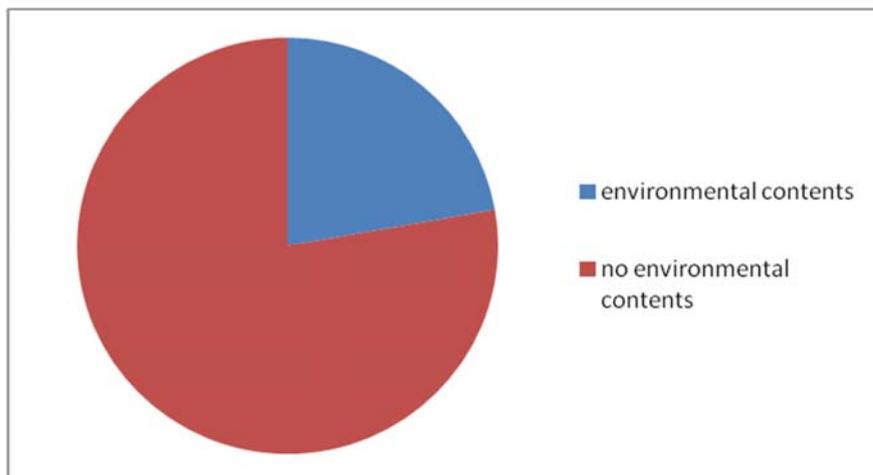


Figure 2. The percentage weights of contents on 10th grade

We may also depend on the number of book pages to calculate the percentage weights as in the following Diagrams.

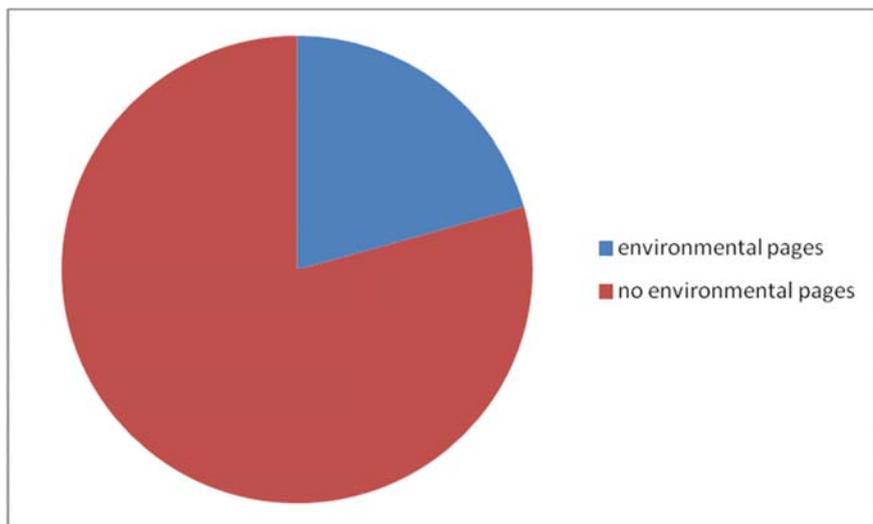


Figure 3. Percent of environmental and not environmental pages in 10th grade textbook

8.3. Photographs

The two environmental chapters contained a total of 27 photographs as in the following Table 3.

Table 3. Environmental photographs in 10th grade book

Photograph frequency	Photograph content
17	Natural
10	Artificial
0	Natural modified

The concept natural on the above table means a photograph that was taken by a camera of a natural scene, while the artificial means a figure, or diagram.

Meanwhile photographs haven't natural modified pictures, such as before-after projects that show enhancements to the environmental situations.

8.4. Objectives of EE in the book

As we can notice from the previous analysis the book has two chapters related to EE, so we want to know about their objectives to compare them with UNESCO objectives.

Chapter four has the following objectives:

- The role of every Palestinian toward the environment, and to protect it.
- To differentiation between rules, regulations, and standards that concerning environmental issues.
- The role of society in applying the environmental laws.
- To know the importance of the rules of law in protection of environments.
- To memorize the local Palestinian laws of environment.

Chapter five has the following objectives:

- To discuss air pollution.
- To know the bad effects of air pollution.
- To explain ozone depletion
- To know the reasons for soil erosion, and its bad effects.
- To know how acid rain forms, and its bad effects.

8.5. Comparative between the book objectives and UNESCO objectives

Secondly, and after defining the EE objectives in 10th grade, and EE in UNESCO we may set the following comparison in the next Table 4.

Table 4. Comparisons between 10th grade and UNESCO level one objectives

UNESCO EE objectives		Palestinian 10th grade EE objectives	Results
Goal level	Sub -goals		
Goal Level I: The Ecological Foundations Level	Communicate and apply the major ecological concepts	Do not exist.	No objectives match at this level.
	Apply a knowledge of ecological concepts to the analysis		
	Apply a knowledge of ecological concepts in predicting the ecological consequences of alternative solutions to environmental problems		
	Understand the principles of ecology		
	Apply a knowledge of ecological concepts.		

It seems that there are no 10th grade objectives that match UNESCO EE at level one as indicted above, thus it is necessary to reform EE in this book in light of UNESCO EE objectives.

Table 5. Comparisons between 10th grade and UNESCO level two objectives

UNESCO EE objectives		Palestinian 10th grade EE objectives	Results
Goal level	Sub -goals		
Goal Level II: The Conceptual Awareness Level	* Understand and communicate how man's cultural activities (e.g., religious, economic, political, social and others) influence the environment from an ecological perspective	The role of every Palestinian toward environment , and to protect it	It seems that there is some consistency between UNESCO and Palestinian 10th grade EE objectives.
	* Understand and communicate how an individual's behaviors impact on the environment from an ecological perspective	To differentiated between roles, regulations, and standards that concerning environmental issues	
	* Identify a wide variety of local, regional, national and international environmental issues and the ecological and cultural implications of these issues	The role of society in applying the environmental laws	
	* Identify and communicate the viable alternative solutions available for remediating crucial environmental issues as well as the ecological and cultural implications of these various solutions	To know the importance roll of laws in protection environments	
	* Understand the need for environmental issue investigation and evaluation	To memorize the local Palestinian laws of environment.	
	* Understand the roles played by differing human beliefs and values		

- * Understand the need for responsible citizenship action
- * Identify and describe a wide variety of successful local, regional, national, and international sustainable development scenarios.

From the above analysis we can conclude that there is a relationship between UNESCO and Palestinian 10th grade EE objectives at level two of UNESCO general objectives.

Table 6. Comparisons between 10th grade and UNESCO level three objectives

UNESCO EE objectives		Palestinian 10th grade EE objectives	Results
Goal level	Sub -goals		
Goal Level III: The Investigation And Evaluation Level	Apply the knowledge and skills needed to identify and investigate issues Demonstrate the ability to analyze environmental issues Demonstrate the ability to identify alternative solutions for important issues Demonstrate the ability to evaluate alternative solutions and associated value Demonstrate the ability to identify and clarify personal values Demonstrate the ability to evaluate, clarify, and change value positions in light of new information Demonstrate the ability to analyze a variety of successful sustainable scenarios.	To discuss the air pollution To know the bad effects of air pollution To explain ozone depletion To know the reasons of soil erosion, and its bad effects To know how acid rain formed, and its bad effects.	It seems that there is some consistency between UNESCO and Palestinian 10th grade EE objectives.

From the above analysis we can conclude that there is a relationship between UNESCO and Palestinian 10th grade EE objectives at level three of UNESCO general objectives.

Table 7. Comparisons between 10th grade and UNESCO level four objectives

UNESCO EE objectives		Palestinian 10th grade EE objectives	Results
Goal level	Sub -goals		
Goal Level IV: The Environmental Action Skill Level	demonstrate a competence with a variety of citizenship action skills		No objectives matches at this level
	evaluate selected actions in light of their ecological and cultural implications	Do not exist	
	demonstrate the ability to apply one or more citizenship action skills		

It seems that there are no 10th grade objectives match UNESCO EE at level four as indicted above, thus it is necessary to reform EE in this book in light of UNESCO EE objectives.

Finally, it is recommended to reform EE of 10th grade at Palestine in light of EE frame work that trustworthy by UNESCO, especially the general objectives at level one, and four.

9. Conclusion

This research is a call for policy makers, and the Palestinian writing team of the Environmental Education Curriculum to reform objectives on the light of UNESCO environmental education. The finding of the research indicated that there are partial consistently between the UNESCO environmental education, and Palestinian 10th grade textbook in two levels of objectives, while there is no match on the other two levels of objectives. It is a hope that more and more policy makers, and the Palestinian writing team of the Environmental Education Curriculum realize their powerful role in inspiring the quality of environmental education in the Palestine. The government and other educational institutions may urge policy makers, and the Palestinian writing team of the Environmental Education Curriculum to improve on Environmental Education Curriculum importance of change in the light of UNESCO environmental education goals.

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