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The American University in Cairo

School of Global Affairs and Public Policy

**ENVIRONMENTAL EDUCATION IN EGYPT: A PRELIMINARY
ASSESSMENT**

A Thesis Submitted to the

Public Policy and Administration Department

**in partial fulfillment of the requirements for (the degree of
Master of Public Policy)**

By

Nouran Assyed Fadi Faragallah

Winter 2016

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The American University in Cairo
School of Global Affairs and Public Policy
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Nouran AssyedFadl Faragallah
Supervised by Professor Dr. Khaleed Abdel Haleem

ABSTRACT

Giving that Egypt is facing serious environmental issues, Egypt needs to raise the public environmental awareness. Effective environmental education is needed to provide students with what is needed for achieving sustainability. This study aims to assess environmental education in formal education in Egypt through two approaches. The first approach is by assessing students' knowledge and attitudes towards environmental concepts. The second approach is by assessing the contribution of environmental policies to implementing environmental education. The study samples were selected from three public schools located in three different cities and villages. The research used qualitative methodology as the investigation was conducted by interviews. The study findings reveal that 90% all interviewed students had a poor level of knowledge of environmental issues; in addition school curricula need to be improved in this respect. Moreover, environmental policies do not give enough attention to environmental education. The study recommends and supports that the school curricula need improvement by adding effective environmental programs or courses, and environmental policies need to be anchored by integrated regulations in order to implement effective environmental education.

TABLE OF CONTENTS

I. Introduction.....	1
1.1. Why Environmental Education.....	1
1.2. Research Sequence.....	3
1.3. Research Questions.....	4
1.4. Research Sequences.....	5
II. Conceptual Framework	6
2.1 The Main Concepts.	6
2.1.1. What is Environment?.....	6
2.2.1. Education.....	6
2.2.4. Formal Education.....	6
2.1.4.Environmental Education Definition.....	7
2.1.5. Sustainable Development.....	7
2.2. Relation between Environmental Education, Raising Awareness and Achieving Sustainable Development.....	9
2.3. Hypothesis.....	10
IV. Literature Review.....	14
3.1. Historical Background of Environmental Education.....	12
3.2. Importance of EE.....	17
3.3. Importance of EE in Egypt.....	20
3.4. Approaches to EE.....	20
3.4. Models of EE.....	21
3.5. Objectives of EE.....	22
4.6.EnvironmentalInformation.....	22
III. Research Methodology.....	23
V. The Contribution of EE to raising Students' Environmental awareness.....	24
5.1. The status of EE in Egypt.....	24
5.2. Formal Education in Egypt.....	26
5.3. Assessing Courses, School Activities, Curricula& Textbooks, and Teachers.....	29
5.4. Are Schools in Cities and Urban areas differ for those in rural areas?.....	32
VI. Egyptian Environmental Policy and its Contribution in EE	33

6.1. Environmental and Population Education Department.....	33
6.2.Environmental, Population and Health Activities Document.....	34
VII. Successful Experience (Japan as a Model).....	36
7.1. Why Choosing Japan.....	36
7.2.Basic Environmental Law in Japan.....	36
7.3. Environmental Education in Japan.....	37
7.3.1.Background.....	38
7.3.2. Comparative Assessment of EE in Egypt and Japan.....	39
VIII. Findings and Recommendations.....	43
8.1. Findings.....	43
8.1.1. Does Education System in Egypt Contribute to raising the Awareness of Environmental Issues or Not?.....	43
8.1.2. Do Environmental Policies Help in Applying EE.....	45
8.1.3. How Far Could the Egyptian Education System Benefits from Japan Experience in EE.....	46
8.2. Recommendations.....	45

List of Figures

Figure 1: Conceptual Framework.....	11
Figure 2: Linear Model of Environmental Education.....	21
Figure 3: Environmental and Population Department Hierarchy.....	34

Chapter One: Introduction

The people all over the world are living longer, according to the United Nations the global population will rise to be 10 billion people by 2100 (Skye, 2013). Therefore, sustainable development is of global importance so that the patterns of economic growth can become sufficiently and equitably accessed by all this population growth without harming the environment that is already demonstrating evidence of threat through climate change. It is so hard for any society to achieve sustainable development unless this society respects the environment as a fundamental value and a first step towards achieving it.

1.1. Why Environmental Education

Over the last few years, Egypt has experienced many environmental challenges, especially after 25th of Jan 2011 revolution. Rapid expansion of urban centers has taken place randomly causing spread of slum areas, pollution and misusing of natural resources. All governorates suffered a stark increase in infringements on agricultural land. More than 350 thousand cases have been recorded causing a loss of about 30 thousand acres of fertile land (Hashem, 2013). As a result of the absence of effective solid waste management system, the rapid increase of the solid waste has become another environmental issue. The black cloud is one other evidence that Egypt is suffering from another environmental problem which is air pollution, and governmental strategy in dealing with this issue shows lack of effective solutions (El Naggari, Abdel Salam&Hussien, 2009). Furthermore, according to the World Health Organization (WHO), Egypt is ranking as the country with the sixth (out of 91 sampled countries) most harmful air which may result in respiratory diseases (El Masry, 2013).The water pollution is so severe in Egypt, as according to the WHO a

sample was taken from two areas of Greater Cairo in December 2012, the sample shows positive "Poliomyelitis" a disease Egypt fought in the past and managed to stop it from spreading in 2004". Marine life is also polluted as toxic industrial waste is dispersed in seawater and rivers causing huge harmful to marine life. Unsustainable and illegal fishing practices are happened daily in protected coastal areas continues. Consequently, fish populations in Egypt are decreasing (MSEA, 2013). All of the previous are serious issues as they reflect more stress on the environment and affect peoples' quality of life.

Given that the human factor is the most influential to the environment, it is extremely important to prepare people at an early stage with a view to correct human behavior through education. Raising the environmental awareness of the general public has become a necessity to promote understanding of the negative environmental and social impacts of such environmental challenges, particularly in relation to individual and communal actions towards the environment. Environmental education helps people in understanding the natural environmental patterns and in dealing with the environmental problems they face, so they can achieve sustainable development and avoid the adverse impacts of environmental issues before they occur. Besides, raising people's environmental awareness is important in order to create a self-deterrent to reach conviction of the importance of protecting the environment.

The current status of environment does not need just teaching environmental issues; it needs from teachers to do far more. Over the last decades, there has been great concern about environmental sustainability (Williams & Tilbury, 2002). Allowing people to explore environmental issues as well as involving in solving these issues creates individuals who could take responsible decisions and actions.

Nowadays, environmental education started to be a part of primary and secondary schools as one of the results of the Agenda 21, in addition, much more cooperation and collaboration between environmental and the educational institutions have increased (Selim&Raey, 1999). Environmental agencies of some countries have taken actions, in order to engage in raising the public awareness by environmental education activities. For example, Malaysian Department of Environment is one of these countries as it has established an educational division under the Environmental Quality Act. This educational division is responsible for promoting and implementing a variety of environmental education activities (ESCAP, 2012). However, Egyptian education system is still dealing with the concept of environmental education as providing students with some environmental facts and figures (Selim&Raey 1999).

According to The United States Environmental Protection Agency EPA, environmental education should not just provide student with information about environmental issues as there is a big difference between both concepts environmental information and environmental education. Hence it is important to investigate to what extend the formal education system in Egypt provides students with environmental education that the society needs, and what are the missing elements in Egyptian education system. Besides, how Egypt could benefits from international experiences in the field of environmental education.

1.2. Research Objectives

The objective of this study is to introduce the importance of raising the public awareness about environmental issues, assuming that raising the public awareness is more effective if it is started from childhood; therefore, the study is concentrated mainly on environmental awareness rising in primary and secondary

formal education. The study provides an assessment of the Egyptian education system in relation to environmental education and environmental public awareness.

Moreover, the study aims to assess the environmental policies in Egypt and how far they could help in applying environmental education. Besides, it investigates if Egypt could benefit from a different international experience in this field or not.

1.3. Research Questions

The methodology used for this study will primarily rely on assessing and analyzing the educational curricula, extra curricula activities, school management operations as well as preschool programs and their contribution to raising the public awareness of environmental sustainability and related urban issues. Hence, the study is answering the following four main questions:

- To what extent the education system in Egypt contribute to raising the awareness of environmental issues or not?

- To what extent the environmental policies help in applying environmental education whether by schools or preschool programs?

- What are the missing elements in the Egyptian education system to raise the environmental awareness, or to be considered encompassing EE?

- How far could the Egyptian educational system benefit from international experience in environmental education?

The study is mainly divided into three main areas of investigation as the following:

- Analysis of educational curricula and extra curricula, activities, and some school management operations in order to find the missing elements and processes in the educational system related to Environmental Education.

- Assessing the contribution of the environmental policies in Egypt in the practice and process of Environmental Education.

- Presenting an international successful experience in introducing Environmental Education at schools that could be applied in Egypt and specify the gaps in the Egyptian educational system.

1.4. Research Sequence

In order to answer the research questions, the study is reviewing governmental strategy in introducing environmental education to students. Since education in early stages is the most influential in students' lives, the study is focusing on primary and secondary education.

The study is mainly divided to seven chapters as the follows:

- Chapter two is the Conceptual Frame Work of this research.
- Chapter three is the Literature Review.
- Chapter four is the Research Methodology.
- Chapter five is the Contribution of Environmental Education to Raising Students' Environmental Awareness.
- Chapter six is the Contribution of Environmental Policies in Implementing Environmental Education.
- Chapter seven introducing Successful Experience.
- Chapter eight is the Findings and Recommendations.

Chapter Two: Conceptual Framework

2.1. The Main Concepts

The chapter will start by going through the main concepts of this study as the follows:

2.1.1. What is Environment?

Human life is depending mainly on the two main natural elements which are the earth and the sun. Each element of them has its own capital; for example, the earth capital are planets, air, water, animals, human, grasslands, fertile soil, oceans, deserts, minerals , while the sun capital is energy comes from it which called solar. Environment is a term used for describing the support system of human and other forms of life. Environment is also the sum total of solar capital and earth capital (A Mishra).

Environment could be also defined as *"The totality of the natural world, often excluding humans: "Technology, of course, lies at the heart of man's relationship with the environment" (Mark Hertsgaard,2013).Environment is also the complex of social and cultural conditions affecting the nature of an individual person or community.*

2.1.2. Education

The study is mainly about the Environmental Education, so it is important to go through the concept of Education as it is defined as "The action or process of teaching someone especially in a school, college, or university and it is the knowledge, skill, and understanding that you get from attending a school, college, or university".

2.1.3. Formal Education

Since the study main concern is raising people environmental awareness through formal primary and secondary education, it is important to illustrate what is meant by formal education. Formal Education *"is corresponds to a systematic, organized education model, structured and administered according to a given set of laws and norms, presenting a rather rigid curriculum as regards objectives, content and methodology.* Students, teacher and institution are the three main parties which an education type must include to be formal (Dib, 1987).

2.1.4. Environmental Education Definition

Environmental Education (EE) *"Environmental Education "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"*(UNESCO, Tbilisi Declaration, 1978). Environmental Education is also the education process that helps people to increase their knowledge and raise their awareness about environmental issues as well as engaging them in solving these issues; hence, empowering individuals to take an action in order to improve the environment. Consequently, environmental education is helping individuals to improve their skills to make responsible decisions by developing a deeper understanding of environmental issues (EPA, 2015).

2.1. 5. Sustainable Development

A. Definition

Sustainability is another important concept in this study. The meaning of sustainability is *"the quality of not being harmful to the environment or depleting natural resources, and thereby supporting long-term ecological balance"*(Dictionary.com). Sustainability means that people and their communities

are made up of social, economic, and environmental systems and must remain in harmony and balance. A healthy, balanced society is one that can endure into the future, providing a decent way of life for all its members—it is a sustainable society. Sustainability is a way of looking at a community or a society or a planet in the broadest possible context, in both time and space. (L.Monday, 2002).The most important concept that this study tackles is Sustainable Development as it defined as *"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This definition is also using by the World Bank.* Sustainable development approach is about doing thing in life by better ways for both the present as well as the future (Sustainable Development Commission, 2011).

B. Sustainable Development Goals

According to the United Nation Agenda 2030, sustainable development goals are as follows:

- End poverty in all its forms everywhere
- End Hunger, achieving food security and improved nutrition and promote sustainable agriculture
- Ensure healthy lives and promote well-being for all at all age.
- Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- Achieving gender equality and empower all women and girls.
- Ensure availability and sustainable management of water and sanitation for all.
- Ensure access to affordable, reliable, sustainable and modern energy for all.

- Promote sustainable, inclusive and sustainable economic growth, full and productive employment and decent work for all.

- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

- Reduce inequality within and among countries.

- Make cities and human settlement inclusive, safe, resilient and sustainable.

- Ensure sustainable consumption and production patterns.

- Take urgent action to combat climate change and its impact

- conserve and sustainably use the oceans, seas and marine resources for sustainable development.

- Protect restore and promote sustainable use of terrestrial ecosystem manage forests, compact desertification, and halt and reverse land degradation and halt biodiversity loss.

- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

- Strengthen the means of implementation and revitalize the global partnership for sustainable development (SDGs, 2015).

2.2. Relation between Environmental Education, Raising Public Awareness, and Achieving Sustainable Development

It has been clear that current development strategies are not sustainable and hurting to environment, and the main factor which affects environment is human. Raising the children's' awareness is the main way to raise the awareness of the public. Given that education and training are the keys to raise public awareness, so they are the keys to achieve sustainability. Latest research shows that raising public awareness

by basic education is the solution to develop and achieve sustainability. For example, Research has shown that education can improve agricultural productivity, enhance the status of women, reduce population growth rates, enhance environmental protection, and generally raise the standard of living (McKeown,2002).

The contents of the sustainable development are wide-ranging, including poverty reduction, human rights, international understandings, and earth environmental observation. According to the previous contents, environment is one of the main issues of sustainable development; consequently environmental education is one of the core issues related to achieving sustainable development (MEXT Japan, 2004).

2.3. Hypothesis

The hypothesis of this study is that introducing environmental education in primary and secondary education can raise environmental awareness; hence contribute to improvement of environmental behavior, the conditions of the environment, and achieving sustainability. However, Egypt is struggling against many environmental issues, especially those related to human interactions with environment and natural resources. Given that there is a core relation between protecting environment and development, it has become a necessity to environmentally educate the public.

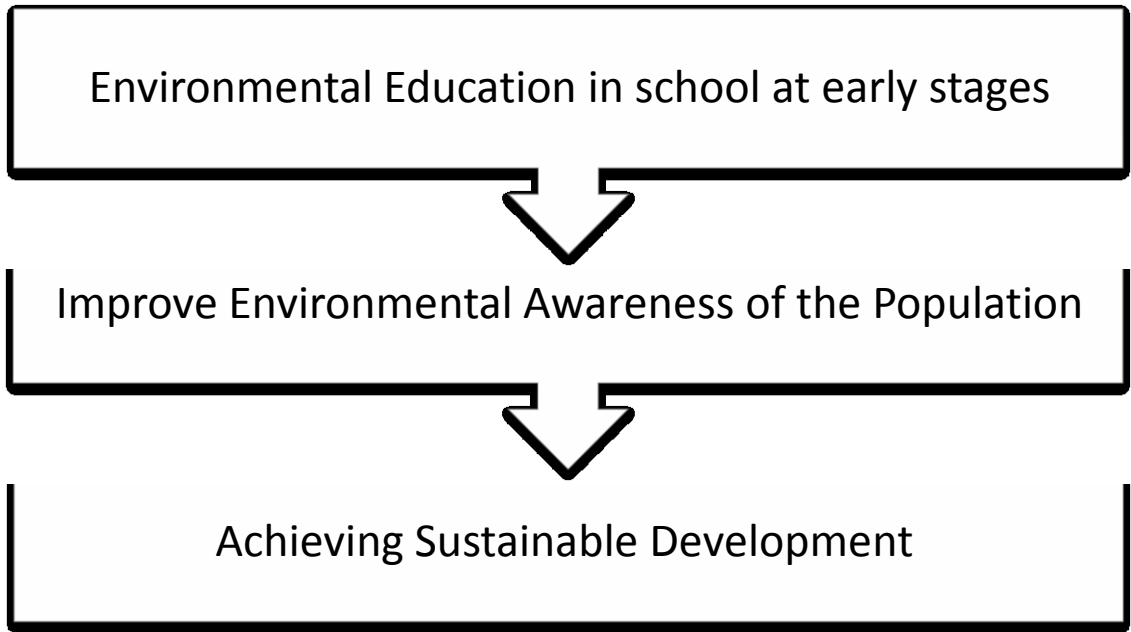


Figure 1: Conceptual Framework

Chapter Three: Literature Review

This chapter will go through the historical back ground of environmental education then the importance of environmental education to the world in general and to Egypt in particular. The chapter also will introduce teaching approaches to environmental education as well as environmental education models. The chapter will end with factors of a successful environmental education.

3.1. Historical Background of Environmental Education

In the 18th century, Rousseau tried to focus on the importance of education in the environmental field recording the first interest of environmental education. Decades later, in early 20th century, a Swiss Naturalist called Louis Agassiz called for studying nature; hence the natural study movement started (Satheesh 2009). In the 1930s Sir Patrick Geddes, a Scottish botanist participated in the early relation between the two words "Education" and "Environment" (Palmer & Neal, 2003).

The two words "Environment" and "Education" have not been used together since then until the mid of 1960s; the Modern Environmental Education Movement that developed during 1980s and 1990s. The first appearance for the expression environmental education was in 1965 and that was in a conference held by Keele University in UK (Palmer, 2002).

In 1968 UNESCO organized a conference in Paris promoting the concept of environmental education and developing curricula for Environmental subjects for all levels of Education. The concern about environmental education started to rise day after, more rapidly after the conference on Human Environment held in Stockholm in 1972, which called for "Education in Environmental Matters for the Younger Generation as well as Adult "which considered the need for a common outlook and for

common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment (UNEP). This was followed by the United Nation establishment of its Environment Program (UNEP) in 1975 (Palmer,2002).

An international workshop on Environmental Education has been held in Belgrade, in 1975 and the outcome was "The Belgrade Charter", which added goals, objectives, principles and guidelines on environmental education to Tbilisi and Stockholm declarations (Satheesh, 2009).

Many conferences have been held after that to promote the concept of environmental education started by "Intergovernmental Conference on Environmental Education", which introduce international environmental education problem IEEP, Tbilisi, 1977 (Palmer, 2002).

The Tbilisi conference report has stated three main goals of environmental education as the following:

(i) To foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas.

(ii) To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment.

(iii) To create new patterns of behavior of individuals, groups, and society as a whole, towards the environment (UNESCO, 1977).

In 1980, one of the important documents which concerns with environmental education was launched. This document called "The World Conservation Strategy"

which stressed on the importance of resources conservation through sustainable development (Palmer & Neal, 2003).

This event was followed by "The International Congress on Environmental Education", Moscow, 1987. The congress is an international congress addressing education for environment and sustainable development. It is the meeting point for everyone working with education for environment and sustainable development or which have an interest in the field (WEEC,2015). The theme of the congress is as the follows:

- Taking Children seriously in addressing global challenges.
- Reclaiming sense of place in the digital age.
- Environmental education and poverty reduction.
- Learning in vital coalitions for green cities.
- (Re) emerging concepts for environmental stewardship and sustainability.
- Mind the gap! Moving from awareness to action.
- Assessing environmental and sustainability education in times of accountability.
- Beyond the green economy: educating and learning for green jobs in a green society.
- New perspectives on research in environmental and sustainability education.
- Educational policy development for environment and sustainability.
- Education and learning for climate change adaptation and resilience.

In the same year 1987, The World Commission on Environment and Development produced report called "Our Common Future" (Raey&Selim, 1999). This event led to the United Nation Conference on Environment and Development UNCED, in Brazil 1992, which called "The Earth Summit". Around 170 countries participated in this conference, which focused on the importance of public education to achieve sustainable development and mainly called for environmental education (Palmer & Neal, 2003).The results of the UNCED included the follows:

- Rio Declaration enunciating 27 principles of environment and development.
- Agenda 21, the International Plan of Action to Sustainable Development, outlines key policies for achieving sustainable development, it also addresses poverty, excessive consumption, health and education, cities and agriculture.
- A statement of principles for the Sustainable Management of Forests, which were all adopted by consensus (without vote) by the conference (Kubiszewski, 2012).

The European Union also has a role in promoting environmental education as in 1988, a meeting of the council of the European community agreed to take vital steps to promoting Environmental Education; in addition they agreed that the main role of Environmental Education is to raise the public awareness of the importance of environmental problems and find solutions for these problems (Palmer &Neal, 2003).

UNESCO also has a vital role towards Environmental Education by the Thessaloniki Declaration in 1997, which clarified the concept of education for sustainable development (Lake 2006).The declaration mentioned two statements made about the concept environmental education. One of those references suggested that

environmental education be referred to as education for environment and sustainability (Knapp, 2010).

In 2005, a program called a decade of Education for Sustainable Development ESD held by the United Nation to call for a sustainable world by the help of the public (UNEP, 2015).

In 2007, a release of the International Panel on Climate Change Report fostered a growing concern among the general public about all environmental issues and their combined impact on earth future (E3 OP).

Latest researches showed that environmental education trend is moving toward research with children frameworks, embracing methods that honor children's perspectives (Green, 2014).

Lately, so many strides in different countries have already been made in order to strengthen environmental education for the general public, especially in terms of defining environmental education and its objectives. For example, the North American Association for Environmental Educators exerted an effort to develop mechanisms both to strengthen standards for environmental education and to make it possible to achieve them. Moreover, In the United States, a solid base for environmental education already exists. There are many leaders in the field, who have had an extraordinary impact on environmental education (Hudson, 2001). Singapore is another example of a country which try to strengthen environmental education. Singapore adopted more than action plans and projects, the Singapore Green Plan is one of them, which its aim is to maintain a more proactive and environmentally conscious population. It stated that this goal can be met through the educating the public. The

Plan recognizes that one of the most important target groups is the young student population (Kong, Wee Hin, Siew Lee, 2008).

3.2. Importance of Environmental Education EE

Environmental Education could be recognized as one of the most effective way to meet the complicated environmental problems, especially these problems that are affecting human quality of life on the earth. Recently, Environmental Education has become a global concern, and the purpose of developing it is to eliminate environmental illiteracy. The main goal of Environmental Education is to increase the public awareness of the environmental problems; in addition given 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 (Batrosh, 2003). Since environmental programs demanded children to interact directly with environment, it teaches children to care for their environment; in addition, it encourages a spiritual connection to the earth and prepares them for the future of the environment they live in. Because today's children are supposed to be tomorrow's leaders who need to be prepared for tomorrow's challenges, and they are disconnected to nature, the importance of environment must be introduced to them (Apgar,2006)

Developed societies always give attention to their environmental problems, so they consider Education is the key (Glaz, 2000). Education is extremely important for humanity in general and societies for particular, it can be formal institutional education or informal education, such as provided in learning traditional ways to live and interact with the environment. In many developed countries, the formal education includes an appreciation of the arts and humanities sciences. Environmental education

must be part of this appreciation and learning process, and it must not be restricted for Universities' students, but to all age groups in societies (Trevors, 2006).

Environmental Education is the most effective way which helps people to make the conceptual connection between economic prosperity, benefits to society, environmental health, and our own wellbeing. Since education is the first and the most effective way which provides citizens with correct behavior, it must be the most successful strategy for environmental management.

Individuals and societies need to be educated on how to deal with the current as well as the future environmental issues especially which is related to natural resource management, while raising the public awareness is not enough. In addition, Environmental Education is essential to promote the need for creating initiatives and social participation in order to achieve sustainability (Taiao, 2010).

Education is important to promote sustainable development and to improve the ability of people to deal with environmental problems. Environmental Education could be effective if it deals with the dynamics of both the physical/biological and socio-economic environment and human development, and these should be integrated in all disciplines. Education should include e formal and informal methods as well as effective means of communication (Takahashi).

In general, the increscent in economic activities cause environmental degradation, especially in developing countries. Some developing countries strategies are to focusing on economic achievements and delaying their environmental issues on the assumption that such environmental degradation would resolve as soon as these countries grow economically. The main reason behind such delaying is that should enable them to afford environmental friendly technology as well as environmental regulations and policies (Iizuka,2000). Egypt as one of those developing countries

which seeks to economic achievements, besides, the lack of environmental awareness in the presence of so many environmental issues, it needs to raise the public participation as well as the public awareness.

Furthermore, the need for public participation has become necessary as a result of the change in the environmental problems source. Nowadays, the main source of pollution has become the processes of consumption. The Human Development Report of 1998 (UNDP) affirms this trend and states that growth in consumption and unbalanced consumption patterns are placing unprecedented pressure on the environment (Iizuka,2000)

Raising the environmental public awareness is sufficiently and effectively done, and it is also not enough for Egypt. Since more environmental problems in Egypt have a strong basis in human behavior harming the environment, there is a dire need to correct this behavior from childhood, hence, for a kind of education that provides students with wide environmental knowledge in order to solve environmental issues and lead to create a better quality of life. Several schools and organizations in Egypt adopted the idea of raising the environmental awareness through education; however, their efforts seem to be isolated. EE is not stated as a priority for the Egyptian ministry of education; since there is no core subject, textbooks or even class time concerns of environment issues (Abdel Salam & El Naga & Hesham, 2009).

Both knowledge and attitudes of students who were observed before and after attending Environmental Education programs were substantially different. Positive attitudes towards environment were among 88% of the observed students. This confirms that students need Environmental Education as a part of their school curricula (Abdel Salam & El Naga & Hesham, 2009).

3.3. Approaches to Environmental Education

Fundamentally, Environmental Education can be applied through three main approaches. The first approach is the Formal Environmental Education approach which is related to the formal education system and offered to children through public schools. The second approach is the Non Formal Environmental Education approach which is offered outside the formal education system by NGO. The last approach is the Informal Environmental Education Approach which offered by Media, Reading, personal effort and everyday experience (The Canadian Environmental Grantmakers' Network, 2006). However there are some teaching approaches to environmental education.

According to Robottom and Hart (1993), there are several teaching approaches to environmental education. The first approach is called "positive approach" which aims to develop the environmental knowledge. This approach considered teachers the keepers of knowledge and students are just passive recipients. The knowledge here is objective, systematic and disciplines-based; in addition, the knowledge here comes from experts in environmental fields. This is mainly based on applied science and based on quantitative methods (Bartosh, 2003).

The second approach is "an interpretive". This approach is conducting activities, and the teacher is the organizer and students are the active learners. The research here is subjective and based on qualitative methods.

The Third approach is the "critical approach" which gives the student the opportunity for being active with the environment. The research method here is qualitative, the teachers are just participants. This approach uses methods like those used in critical social science (Bartosh 2003).

3.4. Models of Environmental Education

The first known model was made in middle of the 1970s in Europe. This model has been studied and mentioned by famous teachers in UK such as Palmer and Uzzel. The model includes three components which are has been used by environmental education organizations and schools. These components are *about, for* and “*through, in, from*” the environment (Palmer, 1997).

The part which is concerned with formal education is "about environment" and the aim of this component is to understand more about the environment.

While the component "for environment", is reflecting the ethical elements for the environment. It concerns with developing the personal responsibility of environment and form positive caring towards the environment, and this component could be recognized as the informal environmental education.

The third component is "through, in, from", which is both formal and informal education; believe that nature is the main tool and resource of the learning process in order to develop the children's interest in the environment (Bartosh, 2003).

Sterling and Cooper (1992) suggested two other models for environmental education. The first model "linear model "assumes that the student passes the stages of environmental education in a strict order one by one (figure 2). The second model "non-linear model "sees all elements are interrelated and mutually reinforcing.

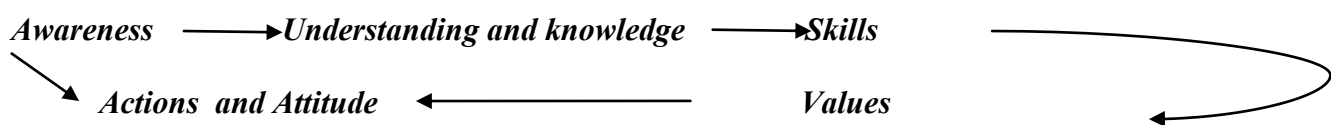


Figure (2): Linear Model (Bartosh, 2003)

Ukrainian researchers Klimov and Ukolov(1994) started ecological education model which consists of four components: cognitive, normative, “values” and “action” (Muradova,2009).

The North American Association developed another model of environmental education (NAAEE) which relies on seven categories: ecological, sociopolitical knowledge, knowledge of environmental issues, cognitive skills, environmental responsible behaviors and its additional determinants (Bartosh, 2003).

3.5. Objectives of Environmental Education

- Environmental Education should develop awareness and sensitivity to the environment and environmental challenges, focus on understanding the environment and environmental challenges, motivate individuals to improve or maintain environmental quality, provide individuals by knowledge to identify environmental challenges and to skills to solve environmental issues, and help individuals to participate in environmental activities which lead to solving environmental issues (EPA, 2015). Environmental Education should also suppose to increase the awareness of children as well as adults about environmental issues, teach people critical thinking in order to make responsible decisions, enhance peoples' decision making and problem solving, and does not advocate a particular point of view

3.6. Environmental Information

There is a huge difference between environmental education and environmental information as environmental information provide people with facts about environments in general and environmental issues in particular, does not involve critical thinking, does not enhance peoples' decision making and problem solving, and advocating a specific point of view most of the time (EPA, 2015).

Chapter Four: Methodology

Qualitative analysis is the research methodology used in this study. The findings of this study will depend mainly on structural interviews. Therefore, four interviews have been held with officials in the Center of Curriculum and Instruction of Material Development (CCIMD) at the Ministry of Education.

In order to assess environmental policies which are related to Environmental Education another interview has been held with one of the officials who are responsible for Environmental Education policies in the Ministry of Education. 100 students from the first grade to the secondary stage participated in this study from the selected three schools, 6 of them also involved in focus group discussions. The interviews have been used to explore the general knowledge base and attitudes of these students towards environmental questions. The students were asked about their perception about Egyptian environmental problems, where and what they are learning about environment and in their opinion what is the wrong and right attitude towards environment.

Another three interviews have been held with schools' management in the selected schools, as three schools were visited in order to examine how far environmental issues are introduced to students. Giving that the standard of education differs in big cities, small cities and rural areas, the three selected public schools were in one of each variation. The first school is in the Capital Cairo and the second one in BanhaCity, Al-Qualiohia Governrate. The third school is located in BaniGhryn village, Markaz Quesna, Al-Monofia Governorate. The Result has been analyzed to identify the attitudes of students towards environment.

Chapter Five: The Contribution of Environmental Education to Raising Students' Environmental Awareness

In order to measure the contribution of Environmental Education in raising students' awareness about their environment, the study will go through the status of Environmental Education in Egypt, and then assess the participation of schools in raising the environmental awareness of students in different governorates.

5.1. The Status of Environmental Education in Egypt

The issue of Environmental Education has become a concern in Egypt since Stockholm conference 1972; however, the actual work has taken place during the last 30 years. Environmental curricula have been added in general education and environmental postgraduate studies has been established in Ain Shams and Alexandria University. Moreover, Environmental Education started also to be covered by the Egyptian Mass media.

The Ministry of Education and the Egyptian Environmental Affairs Agency have started to be responsible for providing students with environmental education. The National Environmental Action plan in 1992 also has considered Environmental Education and raising the public awareness as priority; for example, the Green Corner Project by the Integrated Care Society with the contribution of the Ministry of State for Environmental Affairs and the Egyptian Environmental Affair Agency (EEAA). This project has worked for raising the environmental awareness among children and teenagers by establishing fifty green corner libraries all over the country. Training programs conducted by EEAA for youth to relate health with environment (El Naggar& Abdel Salam&Hussien, 2009). The EEAA project could be an important coordinating body for environmental policy making in Egypt. The main objective of the EEAA is the following:

The development of priorities and follow-up on the implementation of approved plans and programs, formulation of a National Environmental Protection Plan, providing the concerned authorities with the instructions and information necessary to implement this plan, establishment of environmental quality standards that development enterprises in Egypt should adhere to, and the organization of mass media campaigns to promote environmental awareness amongst the public (MacKenna, 2013).

In addition, another action was taken which is the vision 2017 report. This report is an official document adapted by the Government of Egypt with a view to identifying how Egypt should look like in 2017 clearly has taken environmental education in to consideration. The vision includes important environmental consideration (Selim&Raey, 1999).

In general, education is one of Egypt's principle challenges. The educational system in Egypt remains relying on memorization; both teaching and learning style depending on old way of memorization geared toward standardized examination. The Egyptian children are known by their creativity and natural intelligence; however, teaching and learning in Egypt are tending to kill children's creativity and critical thinking (Selim&Raey 1999). Although the exerted efforts in training teachers to help children to be more creative and think critically, the teaching issue is remained the same. The main reason is that those teachers were not taught in an atmosphere that respect and encourage critical thinking and innovative (E3OP). The UNESCO report which discussing the status of environmental education in Egypt stated that Egypt needs to enhance children respect to environment and desire to work for natural environment as well as enjoy working for it(El Naggat& Abdel Salam&Hussien, 2009). In spite of the exerted efforts to enhance environmental education, public schools in Egypt are still suffering from the lack of the effective environmental education. Indeed, this does not help students to modify their attitude towards environment (Selim&Raey 1999). For example, there are no core curricula, text books,

lesson plans, specific classes, or contents in exams that provide students with environmental knowledge. In addition, schools do not provide students with skills and opportunities in order to practice environmental activities. Several non-governmental organizations and projects have been working in the area of environmental awareness and education, but efforts have been isolated and scattered even when successful, because they were not sustained long enough to be widely recognized to support environmental education (E3OP).

5.2. Primary and Secondary Education in Egypt

The study will focus mainly on primary and secondary education. Primary education is referring to the first six years in education. The first three years are usually taught by one teacher for each class which usually contains large number of students, the exams for this level are held at governorate level. The secondary education refers to the three years after the first six years of education (Selim&Raey, 1999).

The teachers for the first three years are responsible for teaching basic subjects such as languages and arithmetic. During these three years, schools should offer a course called "Observations & Activities", this course was made in order to introduce environment to students by carrying out some activities. Indeed, the one teacher system, especially with the very high student-to-teacher ratio, does not help in teaching this course correctly as usually this teacher is neither specialized nor trained in this field. Consequently, this course became only for memorizing facts to help students to pass their exams in the main subjects (Selim&Raey, 1999).

Grades four to the last grade in secondary schools are not better than the previous three years as the current curricula are not addressed the environment as they

rely on memorizing definitions and information in order to pass the exams. The textbooks status is also problematic, as it could be considered the main reason for the lack of environmental awareness between students. A research made by UNESCO in 1999 proved those textbooks' writers has an extremely limited knowledge about environmental education (Selim&Reay, 1999).

5.3. Assessing Courses, School Activities, Curricula& Textbooks, and Teachers

• Environmental Independent Course

Unfortunately, there is no separate course for the environment during the whole primary stage. Some environmental issues and definitions are presented to students through units whether in science or social science. There is a course named agricultural course which is supposed to be relatively related to environmental interests, but most of the times teachers of this course never appear, plus students never look for them as this course is not counted in their final grades. After asking the students sample from different schools about this course,90% of them confirmed that they never see the teachers of this course and they were very happy for it. They were satisfied that the teacher never appears in order to take a break for 45 minutes and 50% of them thought that it is better for them, in their point of view, to study another more important course.

On the other hand, officials at the Centre of Curriculum and Instructions of Materials Development (CCIMD) confirmed that during the first two stages of the Egyptian Education, the primary and the secondary, there is no specific course of environmental science. Although, they proposed a report in 2012 to confirm that there must be a specific course for it, their suggestion was rejected by officials at Ministry of Education. "The main reason behind this rejection is the fear of parents' objections

since what matters to them is reducing the curricula", said an official in CCIMD. However, they at least recommend that all courses must include environmental information even languages and mathematics. Meanwhile, students have to study environmental science when they start their high school stage.

- **School Activities**

"Indeed, there should be direct relation between students and their environment to raise students' respect to environment, unfortunately, the information that curricula contain is not enough to raise students' awareness. This relation can be achieved by adopting the concept of education by practicing", stated by CCMD officials.

After interviewing the student sample from the selected schools, they have been asked about environmental school activities that they participated in before. After defining the actual definition of environmental activity, they all confirmed that they never participate in any school activity which includes dealing with environment. The students were asked also if there are any learning trips include environmental activities and 73% answers were " No", and 27% "my school never arrange learning trips". When managements of the visited schools were asked about school activities in their schools, they agreed that school activities demand budget which they never afford. Moreover, it was found that the Centre of Curriculum and Instructions of Materials Development (CCIMD) has included to curricula a plenty of school activities related to environment to be compulsory during the school year. When the officials in CCMD were asked about the accurate meaning of school activities, they stated that an effective environmental school activity should encourage students to live a "greener" lifestyle, at home and at school by teaching them to be environmentally aware and develop a lifelong correct environmental habits which could potentially make a

dramatic difference in the future of the earth. The activities also should include methods for reducing waste and trash, information about product consumption, recycling tips, facts about pollution and its effects on the environment, global warming statistics, and worksheets on different ecosystems. Furthermore, effective environmental activities should include projects for students to be done inside as well as outside the school. But unfortunately, they failed to enforce these activities.

- **Curricula& Textbooks** (For courses that includes EE information)

Unfortunately, curricula of primary and secondary formal education of Egypt ignore environmental scientific activities. Despite the fact that curricula are sufficient and could even extend to be more than enough in some cases, they focus on definitions with no practice or activities. For example, the social science textbook for the 6th grade mentions information and characterizes about tourism in the Egyptian oases located on the west desert of Egypt without mentioning how to sustain this natural places to make it more useful for next generation or providing students with trips to visit this place. According to teachers from the three different schools, Egyptian curricula neglect some of the most important environmental concepts and issues. Another example, students sample were asked about some environmental concepts, such as "Sustainability", and some environmental issues which Egypt is suffering from, such as "Slums", it was discovered that they never hear about these concepts except on T.V.

- **Teachers**

Teachers in public schools depend on memorizing in their way of teaching. Furthermore, most of students are depending on private courses which first interest is helping student to get higher grades using the same way of teaching which rely on memorizing. The students have been asked in their summer vacation, after a month of

their final exams, about environmental issues such as Desertification and Climate Change, which were mentioned in their text books. Their answers were "I cannot remember", "I am not sure" and "of course I forgot".

According to a Ministry of Education official, almost all teachers who are working for public schools are not qualified enough to teach environmental science as their university education level is less than the required. CCIMD officials stated that "indeed teachers need periodic training; however, there is not enough time during the school year while they are refusing to be trained during the summer as they consider it their official vacation. The Centre of Curriculum and Instructions of Materials Development CCIMD also reported a suggestion in 2012 about the importance of providing every school with environmental booklets contains instructions to the teachers about how to provide students with environmental activities and information that they need. Another orally suggestion was to upload this booklet as a pdf file on the official website of the Ministry of Education. The previous suggestions were to encourage teachers to know more about teaching environmental contents during the school year. However, none of these suggestions were done as a result of the recent political status in Egypt and lack of management efficiency. On the other hand, all the interviewed teachers insisted that they just need more training and more budget to apply the mandatory environmental activities. 35% of them added that they need to teach private courses in order to raise their income while neglecting school working hours because students never get interested in the way of teaching in their schools.

5.4. Are schools in cities and urban areas differ for those in rural areas?

The different between cities, urban and rural schools in dealing with environmental education will be clarified as the follows:

A. Cairo "Big City":

Indeed, there is no separate course for environment science for all schools; in addition, they all have the same curricula the same text books. In the selected school in Cairo, students rely more on private courses which means more memorizing. Teachers give more care to educating students about their environment comparing to schools in small cities and villages. However, students never attend agricultural activity course, and school activities usually are not related to environmental issues and funded by students.

B. Banha, Al Qualiobia "Small City"

Students are less relying on private courses, less memorizing and more understanding however, teachers careless about educating students about environment, and students almost see the agriculture course's teachers. The students in the selected small city have no school activities

C. BaniGherian, Qwisna, Al Monofia "Rural"

Few students in rural areas are interested in private courses, while Teachers do not care about educating students about environment. The teachers of agriculture course never appear, and there are no school activities

The previous shows that rural environmental education status is worse than its status in cities. The only justification can be that the educational process is more basic and of less quality generally in rural areas than in urban areas. Also, resources allocated to education are more in cities than villages, stated by officials in the selected rural school. According to the school management in rural school, the nearest to the Ministry of Education the much committed to policies that is why the status of

environmental education is introduced much better in schools of Cairo. In addition, students in big cities are more familiar with environmental activities as they do not only rely on their schools to learn about environment. Most of these students are members in private clubs which arrange activities that might help children on this age to be close to environmental issues, in addition, environmental NGOs' activities are easy to be reached in cities.

Chapter six: Egyptian Environmental policy and its contribution in Environmental Education

In 1990th, the government focused on developing the public sector aiming to raise the standard of living, without due attention to environmental impacts of economic activities particularly industry, thus allowing unsustainable development to occur. In general, Egyptian environmental policies failed to enforce actions plans in order to protect natural resources or modify people environmental behaviors. There are some already exist policies which targeting food subsidies, income transfers, employment creation schemes, the Social Fund for Development, and vocational training. However, these policies are not integrated and neglecting environmental education. The current Egyptian environmental policies failed in identifying the reasons why it is ineffective and what is preventing it from being successful. Current enforcement and regulatory measurements of Egyptian law should be improved by creating new policies to be fully implemented (MacKenna, 3013).

6.1. Environmental and Population Education Department

On the governmental level, Environmental and Population Education has begun as an office belonging to the chairman of the Central Administration for secondary education in accordance with the Ministerial decree No. 246 dated 10.14.1977. A ministerial Decree No. 234 issued on 09/15/1993 was to create departments and sections for environmental population and education in all governorates of the republic. Environmental and population department has become a general department by a decision of the President of the Central Agency for Organization and Management No. 35 for the year 1985, and the hierarchy for the general department for population and environmental education is as the following:

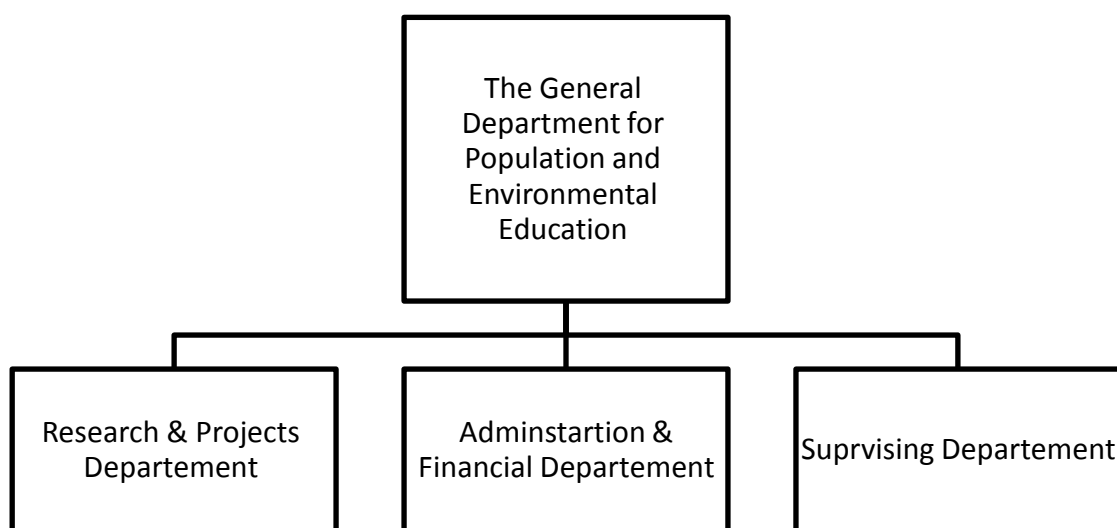


Figure (3): Environmental and Population Education Department

(MOE,2015)

In 1992, the Department of Environmental and Population education submitted a draft to establish groups in every school to be responsible of environmental and population education. Since there is no teachers specialized in environmental science, these groups are under the supervision of social science or science teachers. Each group is aiming to raise students' environmental awareness plus organizing environmental activities (Ministry of Education official Web page). Unfortunately, these groups do not exist on the ground according to the interviews with students and school management which confirmed that the Ministry of Education failed to enforce this plan (EEAA).

6.2. Environment, Population and Health Activities Document

In 2013, Environment, Population and Health Activities Document, which is an official publication by the Ministry of Education, was issued aiming to make a positive reaction between the educational institutions and the surrounding

environment including environmental, health, and social problems. The document contains environmental activities including specific dates for implementation, Environmental projects with developed plans for implantation, environmental standards, environmental goals for each activity, environmental cases which shed light on important environmental issues, general information about the environment, skills which have to be developed in students to fully understand environmental activities, and instructions and directives such as how and when environmental activities should be done (EEAA).

However, the previous document needs further steps to ensure that these policies are properly regulated and enforced. In general Egypt currently struggles with the enforcement of existing polices, which extends beyond environmental policy, then regulations of existing policies must be increased or sustainable development will be unattainable.

Chapter Seven: Successful Experience (Japan as a Model)

In general, Asian region gives attention to Environmental Education as education system of most of Asian countries includes Environmental Education. The development of Environmental Education in these countries mainly depends on the environmental history of each country of them in terms of environmental issues which they face, their political status, economic situation, etc. This chapter will go through one of the most successful countries in introducing environmental concerns through formal education, which is Japan.

7.1. Why Choosing Japan

Choosing Japan was for several reasons as shown below:

- Japan is one of the most successful countries in dealing with environmental issues besides it has a strong education system.

- Japan has Experience in the Environmental Education Field as it has long history with it.

- The Ministry of Education chooses Japan to send Egyptian teachers to it in order to get training in Environmental Education every now and then and when they were asked about why they choose Japan, the answer was because it is one of the most successful countries in implementing effective Environmental Education.

7.2. Basic Environmental law in Japan

A number of Environmental laws have been passed in Japan after drawing up Agenda 21. Most of the established and enforced environmental laws and administrative plans in Japan were related directly to education, training or public awareness. Furthermore, In Japan, national policies related to sustainable production and consumption are based on the Japanese Basic Environmental Law and Basic Environmental Plan (MEXT, 2015).

•Environmental Law Related to Education in Japan

The law related to environmental education draws up basic policy and other necessary items for improving motivation of environmental conservation and environmental education. The law stated measures concerning improvement of environmental education in schools, which should be taken by national government and local government. In addition, enrichment of learning by experiences, improvement of teachers' quality and so forth. The law related to education, public awareness and training in the Basic Environment Law is, Articles 25, 26, and 27 as follows:

Article 25 (Education and Learning on Environmental Conservation): The state shall take necessary measures to increase corporations' and citizens' understanding of environmental conservation and to encourage their willingness to engage in activities related to environmental conservation, **by means of promoting environmental education and learning** and improving public relations activities with regard to environmental conservation.

Article 27 (Provision of Information): The state shall make efforts to provide necessary information appropriately on environmental conservation, including the state of the environment, so as **to promote the education and learning** provided for in Article 25 and to contribute to the activities voluntarily conducted by the private bodies etc. provided for in the preceding Article, in consideration of the protection of the rights and benefits of individuals and legal entities.

In December 1994, the Basic Environment Plan was established aiming to Promoting Environmental Education and Learning. The basic plan addressed the importance of giving the opportunity to every individual in the society ,especially youth as the next generation, to know the relation between life and natural environment; so as to growing up appreciating and understanding the relation between life and nature, as well as showing concern for this relationship (Takahashi,2014).

7.3. Environmental Education in Japan

7.3.1 Background

In Japan, many agencies such as National Council of Educational Reform and the Central Council for Education are responsible for making educational reform especially in the last few years so as to face enormous social and environmental changes.

Japanese Government successes in preparing policies related to Environmental Education because it actually has the history of Environmental Education started in 1960s aiming to recover a better environment for next generations according to the following:

- In 1964, Primary and Middle School Teachers' Pollution Control Measures Study Association.

- In 1971, Partial revision of Primary and Middle School Education Guidelines, then Establishment of the Environmental Agency.

- In 1977, Establishment of Japan Environment Association, and Promulgation of new primary and Middle School Education Guidelines.

- In 1978, Promulgation of new High School Education Guidelines.

- In 1988, Report by Environmental Education Panel.

- In 1989, Revision of School Education Guideline (Takahashi).

In 2003, the Law for Enhancing Motivation on Environmental Conservation and Promoting of Environmental Education was enacted. The basic policy of the law was decided by the cabinet of Japan. The Fundamental Law of Education was renewed in 2006 and its Act 2 "Aims of Education" says the follows:

"To build a corporative attitude to esteem life and nature, and to preserve environment".

Now, Environmental Education is more common. Schools are giving more attention to Environmental courses and activities, moreover, providing teachers with training variety of environmental programs. The ministry of Education in Japan is now responsible for enhancing and expanding schools' information exchange networks. The research centers for environmental education have been created at teacher training colleges (Suwa, 2010).

7.3.2. A Comparative Assessment of Environmental Education in Egypt and Japan

• Courses

As in the case of Egypt, Environmental Education in Japan is not taught as an independent course, but it is integrated with other courses such as science and social studies. However, in 2002, new courses of study have been implemented in succession in elementary and junior high. The environment-related content has been improved and positioned in each subject such as Social Studies and Science. Moreover, in Japan, teachers are allowed to choose topics related to EE in their teachings. Besides, study books, references and other teaching aids are readily available. Many local NGOs or Non-Profit Organizations (NPOs) are also involved in assisting schools to conduct Environmental Education in class (Tagi, 2004).

•Projects and activities

A. Projects to advance rich experiential activities

This project includes volunteer and other social service activities and nature experiences for fostering social skills and rich humanity among schoolchildren. The main idea of the project is provide students with experiential activities within different

environments by sending students from urban areas and big cities to agricultural forestry or fishing villages and other regions rich in nature, to have them experience farming, forestry, and fishing work as well as nature (MEXT, 2015).

B. Regional Centers of Excellence on ESD

In Japan if any region wanted to implement environmental education in schools, universities, museums, local communities and local governments, and they have been undertaken environmental education separately. RCEs could integrate these separated activities with regional strategy. The idea is that if RCEs implemented successfully, the project would meet great outcomes (MEXT, 2015).

C. Green Plan for Advancing Environmental Education

Japan has implemented the "Globe Project," as a part of applying the Green Plan. This project is advocated by the United States. Schools of Japan are enforced to participate in this project. The project is aiming to measure global learning for the environment, and to promote outstanding practices of environmental education in each region of Japan. Moreover, the project is aiming to raise Japanese teachers' instruction abilities by holding meetings on a nationwide scale.

D. Eco-School Pilot/Model Project

From now on, building educational facilities will form the perspective of respecting the environment. The MEXT puts several compulsory factors to be implementing when building new schools in order to be Eco-School as the follows:

(i) If the facility is designed and constructed to alleviate the burden on the environment,

(ii) If its education contributes to learning that can be applied to environmental education, as well, and

(iii) If in operational terms, it effectively applies and efficiently uses natural energy (MEXT, 2015).

In general, the comparative assessment of environmental education in Egypt and Japan could be illustrated briefly as the following table:

Environmental Education Factor	Egypt	Japan	Explanation
Courses	No independent course for EE	No independent course for EE	EE contents are introduced to students within other courses
School Activities and projects	Not implemented on the ground	EE process includes many compulsory projects and activities	The environmental activities in Egypt is not implemented although it have been added recently to schools' textbooks because of following <ul style="list-style-type: none"> •The lack of trained teachers

			<ul style="list-style-type: none"> • Funding issues • The lack of governmental supervision
Law and Policies	Are not integrated	Are integrated	<p>Egyptian policies needs further steps to ensure that these policies are properly regulated, and the enforcement of these polices then regulations of existing policies must be increase</p>

Table (1) A preliminary Comparative Assessment of Environmental Education in Egypt and Japan

Chapter Eight: Findings and Recommendations

8.1. Findings

As a result of international interest, sustainable development has become a common expression and important issue. It has become so important for the world in general and for Egypt in by default. Of course it is impossible to be achieved without giving attention to environmental issues.

As it was mentioned, Egypt is facing many environmental challenges. As the human factor is the most effective factor in impacting the environment, people have to be environmentally educated from an early age. In order to achieve sustainability in Egypt, the Egyptian education system has to provide children with effective Environmental Education and the Egyptian Ministry of Environment has to take into consideration the importance of making effective policies to assure raising the public awareness about environment.

This study aims to introduce the importance of raising the public awareness about environmental issues especially in the early stages of people's education. Assuring that raising the public awareness is more effective if it is started from childhood. Consequently, the study is concentrated mainly on primary and secondary formal education. The answers for the main research questions are as the follows:

8.1.1. Does the Education System in Egypt Contribute to Raising the Awareness of Environmental Issues or Not?

The answer of the previous question is "No" as after interviewing some officials at the Center of Curriculum and Instruction of Material and Development (CCIMD) and at 100 students from the first grade to the secondary stage participated in this

study randomly; the researcher found that the environmental general knowledge of students is weak among 90% of students. Attitudes of them toward environmental issues were found to be negative. This was as a result of the lack of environmental activities, the untrained teachers, and the weak textbooks and curricula. Moreover, the Ministry of Education is not giving attention to neither environmental courses nor activities, and it does not provide teachers with training variety of environmental programs. In addition, the study found that the closer the school to the capital and the Ministry of education the better status in providing students with environmental activities and better teacher, For example, the study found that 20% of the students in Cairo have been involved in environmental activities, on the other hand "None" of Students in Monofia ever hear about environmental activities. This simply means that the Ministry of Education enforcement and supervision is weak. In addition, educational process is more basic and of less quality generally in rural areas than in urban areas. Also, resources allocated to education are more in cities than villages.

8.1.2. Do the Environmental Policies Help in Applying Environmental Education?

Environmental policies in Egypt do not help enough in applying successful environmental education. Egyptian environmental policies failed to enforce actions plans in order to neither protect natural resources nor modify people environmental behaviors. In addition, the current environmental policies are not integrated. Although both the Ministry of Education and the Ministry of Environment have been cooperated for implementing environmental education, they failed to enforce and supervise their plans. However, these policies and plans could be useful if further steps are taken to ensure they are properly regulated and enforced.

8.1.3. How Far Could the Egyptian Education System Benefits from Japan Experience in Environmental Education?

In Japan, more attention is given to how to improve the quality of early childhood education in service of environmental awareness and sustainability; for example, classroom practices, curriculum and pedagogy and early childhood teacher education. Egypt environmental education plans do not give attention to reaching children who are from low-income families, ethnic minorities, and those who are living in rural and remote areas and urban slums. Meanwhile in Japan, Environmental education is reachable all over the country. Since the relationship between development and environment can be maintained through policies and implementation tools Japan succeeded in their Environmental Education plans while the current educational policies in Egypt are not integrated and are not supporting enough environmental education. Moreover, require actions to support environmental education and to be properly enforced.

8.2. Recommendations

Environmental Education mainly aims to raise people commitment and motivation to help ensure environmental quality and a better quality of life. This commitment and motivation often begins with an awareness of their surroundings. The follows recommendations should be useful for the success of environmental education process.

• Wider Reform for Educational System

Environmental educators should provide students with opportunities to explore their environment and deal directly with it by engaging them in direct discovery of the surroundings. Wider reforms of the education system are needed for EE to be more

effective. Education system should give the opportunity to students to make their own decisions and teach them how to think more critically about their choices. Students must learn that what they do individually and collectively to the environment, whether it is negative or positive, can make a difference. Students should believe that they have the ability to influence the world to create a sense of personal responsibility.

• Policies and Regulations Enforcements (Role of Ministry of Education and the Ministry of Environment)

Egypt is struggling with the enforcement and regulation of existing policies, which also cover environmental policy. Egypt environmental policies should be more integrated and more supporting to environmental education. Further steps must be taken to ensure that environmental policies which tackle environmental education are properly regulated and enforced. If steps are not seriously taken to modify regulations of these policies, Egypt will stay struggling for sustainable development and environmental education will remain ineffective.

Some projects have been made for raising the children' awareness such as The Green Corner project and Mother Earth Our Children's Future booklet (EEAA,2015). Yet, both the Ministry of Education and The Ministry of Environment have to cooperate and exert more effort to make sure that these projects and booklets are mandatory taught to every students all around the country.

• Environmental Education Model

Egypt should benefits from successful experiences in Environmental Education field such as Asian countries experiences. Japan is one of those counties which give more attention to improving the quality of early childhood education in the service of

environmental awareness and sustainability. Egyptian education system should include classroom practices, environmental activities, and curriculum and pedagogy and early childhood teacher education.

- **Curricula, Extra Curricula and Activities**

The Ministry of Education can improve environmental education also by adding schools' environmental compulsory activities as well as environmental projects; in addition, funding those activities and projects in order to assure implementing them. Providing students with handbooks includes Environmental issues as in the case of Japan would be useful also to raise the environmental awareness of students, Moreover, the current curricula need content analysis to identify their point of weakness.

- **Teachers**

Since teachers are not qualified to teach students about environment. The Ministry of Education with the cooperation with the Egyptian Environmental Affair Agency should provide the teachers who are working for public school with environmental courses and training lectures.

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Annex: list of interviewees and the interview forms (questions).

Appendix

أسئلة الطلاب

ما هو عمرك و الصف الدراسي الملتحق به؟

هل التحقت باي مدارس خارج مصر من قبل؟

ما مدى معرفتك بمشاكل البيئة العالمية و المحلية؟

إذا كنت تعرف بعض هذه المشاكل فمن أين لك بهذه المعلومات؟

ما هي المواد التي تمدك بمعلومات عن البيئة؟

كيف يتم تدريس الدروس التي تحتوي على معلومات بيئية؟

في رأيك ما هي التصرفات الصحية و الخاطئة في التعامل مع البيئة المحيطة؟

هل تعتقد أن المدرسة و المدرسين و الكتب المدرسية و المواد الدراسية تساعدك على زيادة معرفتك بالبيئة؟

هل تعتقد ان هناك اي رحلات مدرسية تساعدك على التعامل مع البيئة مباشرة؟

هل تعتقد انك تشارك في اي نشاطات بيئية تحتوي على كل او بعض ما يلي:

النشاطات البيئية يجب ان تحتوي على نشاط للحد من الفضالات و القمامة- نشاط يشرح اعادة تدوي المخلفات- نشاط يبين لك تأثير التلوث البيئي بأنواعه- نشاط يعرفك بأخر إحصائيات الأحتباس الحراري

ماذا تعرف عن التصحر- الاحتباس الحراري- التنمية المستدامة- العشوائي