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NEAR EAST UNIVERSITY

INSTITUTE OF EDUCATIONAL SCIENCES

ENVIRONMENTAL EDUCATION AND MANEGEMENT

THE LEVEL OF SECONDARY SCHOOL STUDENTS' ENVIRONMENTAL AWARENESS OF CLIMATE CHANGES IN LIBYA

MASTER THESIS

Master Students:

Amrajaa ALMASAHY

Nicosia

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ABSTRACT

The Level of Secondary School Students' Environmental Awareness of Climate Changes in Libya

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Master Degree, Environmental Education and Management

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This research aims to study and determine the student's awareness of Climate change problem and equip them with skills to enable them to develop solutions that contribute to raising awareness, because of the importance of the environment and conservation and introduce students to environmental problems. And also to find out the level of attitude and behaviors of the students who study in secondary schools in Libya about climate change, not only that but also to check if there is any kind of relationship between awareness of the students about the environmental protection and demographic variables such as their grades, their departments, and gender depending on the problem sentence mentioned above. This will be done by checking some significant relationships between the environment and knowledge of grade, age, gender and population in the area of the research, to study the relationship between this awareness and between some economic and social characteristics of the students.

To achieve this goal, the researcher prepared a questionnaire for a random sample of Libyan students who are studying at secondary school in various cities in Libya. To analyze these data, the researcher used a non-parametric statistical analysis for the previous relationship, due to the nature of metadata where chi-square has been used to study the moral awareness of the relationship among the students of ages, gender and level of education.

These results showed the existence of statistically significant relationships between the level of education awareness and these characteristics. The results also showed that there were significant correlation between student awareness and

education. The study concluded that, knowledge of environmental issues should be directed to teach and educate students with a focus on attitudes and behaviours.

Keywords: Climate change, environmental awareness, Libyan student, Environmental education.

ÖZET

LİBYA'DAKİ ORTAOKUL ÖĞRENCİLERİNİN İKLİM DEĞİŞİKLİĞİ KONUSUNDAKİ ÇEVRE BİLİNCİ SEVİYESİNİ BELİRLEME

Yüksek Lisans Öğrencisi: Amrajaa Al AMASHAYA

Yüksek Lisans, Çevre Eğitimi ve Yönetimi

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Bu araştırma, iklim değişikliği problemi hakkında öğrencilerin farkındalıklarını incelemek ve belirlemek ve de çevreyi korumanın önemi nedeniyle bir çeşit farkındalık yaratmaya katkıda bulunan çözümler geliştirmelerini sağlayacak becerilerle donatmayı ve öğrencileri çevre sorunlarıyla tanıştırmayı amaçlamaktadır. Ayrıca, Libya'daki ortaöğretim okullarında okuyan öğrencilerin iklim değişikliği ile ilgili olarak tutum ve davranış düzeylerini öğrenmek ve öğrencilerin çevre koruma ve demografik konulardaki farkındalığı arasında herhangi bir ilişki olup olmadığını araştırmaktır. Yukarıda bahsedilen problem cümlesine bağlı olarak sınıfları, bölümleri ve cinsiyeti gibi değişkenler kullanılmıştır. Bu, çevre, sınıf, yaş, cinsiyet ve araştırma alanındaki nüfus bilgisi arasındaki bazı önemli ilişkileri araştırarak bu farkındalık ile öğrencilerin bazı ekonomik ve sosyal özellikleri arasındaki ilişkiyi inceleyerek yapılacaktır.

Bu amaca ulaşmak için araştırmacı, Libya'daki çeşitli şehirlerde ortaokulda okuyan rastgele bir Libyalı öğrenci örnekleminden elde edilen bir anket hazırlamıştır. Araştırmacı, meta verilerin doğası gereği, öğrenciler ileeğitim seviyesi cinsiyet ve yaş arasındaki ilişkilerin ahlaki bilincini incelemek için ki-kare kullanıldığı için, bu verileri analiz etmek için önceki ilişkiler için parametrik olmayan istatistiksel analiz kullanmıştır.

Bu sonuçlar, eğitim farkındalığı seviyesi ile bu özellikler arasında istatistiksel olarak anlamlı bir ilişki bulunduğunu göstermiştir. Sonuçlar ayrıca, öğrenci bilinci ile eğitim arasında anlamlı bir korelasyon olduğunu ortaya koymuştur.

Çalışma, çevre konularındaki bilgilerin, öğrencileri tutum ve davranışlara odaklanarak öğretmeye ve eğitmeye yöneltileceği sonucuna varmıştır.

Anahtar kelimeler: İklim değişikliği, Çevre bilinci, Libya öğrencileri, Çevre eğitimi.

ABBREVIATION

NEP: New Ecological Paradigm.

ITCZ: Inter Tropical Convergence Zone.

NOAA: National Oceanic and Atmospheric Administration.

EIA: Energy Information Administration

UNDP: United Nations Development Programme.

MEF: Ministry of Environment and Forestry.

IEEP: International Environmental Education Program.

UNESCO: United Nations Educational, Scientific and Cultural Organization.

X: Arithmetic Average

N: Number of People

(%): Percentage

P:Significance

TERMINOLOGY

Environment is a complex of many variables, which surrounds humanity as well as the living organisms. Environment includes water, air and land and the interrelationships which exist among and between water, air and land and human beings and other living creatures such as plants, animals and microorganisms (Kalavathy, 2004).

The researcher suggested that environment consists of an inseparable whole system constituted by physical, chemical, biological, social and cultural elements, which are interlinked individually and collectively in myriad ways.

The natural environment consists of four interlinking systems namely, the atmosphere, the hydrosphere, the lithosphere and the biosphere. These four systems are in constant change and such changes are affected by human activities and viceversa (Kumarasamy et al., 2004).

Environmental Awareness: The term environmental awareness is used in many areas, but it mostly takes place in politics at present. Environmental awareness implies, as most of the scientists emphasize, environmental knowledge, attitude towards the environment and good environmental behaviors. The person with environmental awareness is the one who is not egoist, but shows environmental friendly behaviors and who is not neutral and indifferent to destruction of the environment and who thinks just about his own benefits and becomes ambitious about them (Erten, 2004).

Environmental Education: It is a process to help individuals, who receive education, become citizens who have knowledge, ability and values which could provide and encourage them display responsible behavior towards the environment (Devlet Planlama Örgütü, 2001).

Climate: Climate, in a narrow sense, is usually defined as the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period for averaging these variables is

30 years, as defined by the World Meteorological Organization. The relevant quantities are surface variables such as temperature, precipitation and wind. Climate in a wider sense is the state, including a statistical description, of the climate system. Climate Divisions The five NOAA (Anderson, 2012).

Climate variability: Climate variability refers to variations in the mean state and other statistics (such as standard deviations, statistics of extremes, etc.) of the climate on all temporal and spatial scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability). See also climate change (Hoegh-Guldberg, O., Mumby P. J, Hooten A.J., Steneck, R.S, 2007).u

Adaptation: An adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory, autonomous, and planned adaptation (Turner, 2003).

Aerosols: A collection of airborne solid or liquid particles, with a typical size between 0.01 and 10 micrometer (a millionth of a meter) that reside in the atmosphere for at least several hours. Aerosols may be of either natural or anthropogenic origin. Aerosols may influence climate in several ways: directly through scattering and absorbing radiation, and indirectly through acting as cloud condensation nuclei or modifying the optical properties and lifetime of clouds (Lambert, S. J., G.J. Boer, 2001).

Attribution: Climate varies continually on all time scales. Detection of climate change is the process of demonstrating that climate has changed in some defined statistical sense, without providing a reason for that change. Attribution of causes of climate change is the process of establishing the most likely causes for the detected change with some defined levels of confidence (Pratheret, al, 2011).

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CHAPTER I
INTRODUCTION

Climate always changes; it is an interesting issue of discourse for stop seat savants (Roach, 1997). In the end of the twentieth century, common sciences have progressively centered around the problems and dangers of current social orders. Environmental change is considered as the most genuine environmental test that debilitates created and less created nations. The society, human welfare and nature of human life has effected by achieved a basic extent with a genuine (Domrös, 1996). In this way, the effect on environment, human welfare, and financial frameworks, at present time, is genuinely mull over by worldwide specialists and has been accepting significant late consideration from governments.

Environmental change has been digressed from the typicality; “its hugeness showed up as indicated by the genuine utilization of factual tests”. It is in every sense extremely difficult to put isolated changes brought about by man from the ordinary ones like the standard changes that still do not know definitively (Donaire, 2000). Despite changes in the environment, there are various terms to delineate the climate (eg, variability, designs, influence, periodicity and instability). Air hesitation infers the regular whimsy in the steady stochastic process approaching the environment in size of last thirty years (Almabruk, 1995). Assortments of climatic incorporate transforms in the reach of yearly or values of decadic and the meaning is relentless, in climate change, both average and discrimination change over time (Donaire, 2000). The term “inclines“means the natural change that represents a series or monotony of normal values during the recording season.

Consistent number appropriations differ parts of natural transform achieved seven thousand altered structures, 95% of the composition is containing between the period of 1951-1997, with a more outrageous exponential rate of increase, increasing at customary intervals (Stanhill, 2001). Encounters number on ecological transform absorbed in the Gastrophysical and Meteorological Summaries was analyzed. The essentials materialized in 1962 and in 1997 works from a total of 89 social occasion systems had been transmitted (eg March of April 1995 in Berlin, wherever in an agreement called "Berlin Mandate" December 1997). In Kyoto, More than 170

countries have approved half of human-induced biological progress. (Houghton, et al., 2001). The estimate of the total expenditure on inspection for natural changes shown above is similar to the aggregate of US $ 3 billion (Stanhill, 2001).

Researchers found that in the middle of the last thousand years, recognition was seen over two periods, the main time period was in the region of 1910 and 1945, and the second in the region of 1976 and 2000. The 1990s saw A While 1998 was the hottest year, as evidenced by recorded environmental experiences. "Climate scientists suspect that temperature will increase in the region of 1.5 and 6 ° C (Desancker, 2002).

According to Houghton, et al., (2001)Change of Air has moreover happened in further basic edges; And precipitation by 0.5-1% consistently in the 201's on most of the mid and northern hemispheres, 0.2-0.3% down on tropical land areas (10 ° N-10 ° S), while it fell on a noteworthy piece of semi-land (About 10 ° N-30 ° N) By regarding 0. 3% / decade and need been watched that those shady spread need stretched out in the mid and high-range zones dependent upon 2%.

An overall temperature modification is routinely cleared up by the anthropogenic nursery affect happening on account of spreads of CO2. The dedication of CO2 transmissions to a perilous environmental devation is more than 50 % of nursery gasses (Wellburn, 1997), and distinctive gasses which empower sunshine to accomplish the world's surface however keep a part of the infrared or The warmth radiations produced by the Earth will escape into space (Pittock, 1988). In the middle of the secret past 100 years, along these lines of consuming (coal, oil, as well as gas) Furthermore clearing woods, the substance union of the climatic layers need basically transformed. These adjustments in the physicist making need wide outcomes for those world's earth Also natural aggregations that would bolstered Toward atmosphere and human success and economy (Hardy, 2003).

The size and future natural rate of change depends on the extent of the transmitted greenhouse gases, the environmental affect on these gases, and how much the effects are adjusted through airborne discharges (Jacqueline, 2000). In Libya, in the light of the 2002 estimates, imperative use was 69.2% of oil and 30.8% of oil in the steaming state, the overall CO2 emissions attributed to oil (71.7% %) And oil gas (28.3%) (EIA, 2005) That the essentiality division, which is the standard

source of livelihood increases in Libya, is basically dependent on unsustainable energy sources (oil and fuel gas).

Ecological change has common impacts which will be extraordinary in different perspectives, for example biodiversity, security of food, resources of water and human prosperity. Libya may be one of the country's most affected by the effects of ecological change, because it has forced regular resources (water and soil) into dry and semi-arid lands and more than 95% of their relatives live in the coastal zone affected by rising sea levels.

1.1. Research Problem

The researcher want to finds out whether or not there is a problem for high school students about the environmental issues that may affect the future life in Libya. This research was conducted to find out the level of attitudes and behaviors of students, who study in secondary schools in Libya, on climate change. Not only that but also to see if there is any kind of relationship between students' awareness about environmental protection and demographic variables such as their grades, their departments, and gender related to the problem sentence mentioned above.

1.2. The sub-Problem of the Research

The sub-Problems of the study are shown as following:

- Is there any significant relationship between the environment and knowledge of secondary school students in Libya?
- Is there any significant relationship between the climate change and environment knowledge of secondary school students in Libya?
- Is there an important relationship between the environment and knowledge of grade and age?
- Is there any significant relationship between the population of the area where students live and their environmental knowledge?

1.3. Aim of the Research

The aim of this research is to determine the student's awareness of the Climate change problem and equip them with skills to enable them to develop solutions that contribute to create awareness of the importance of the environment and conservation and introduce students to environmental problems and the resulting

adverse effects, To determine the behavior of the students about their environment and their role in the preservation and maintenance and rationalization of consumption of resources, to spread environmental awareness and develop the skills towards Climate change problems and change harmful behavioral patterns .

This study also analyses the relationship between the awareness of high school students in the study population and demographic characteristics.

1.4. The Importance of the Study

Most of the environmental problems occur because of irresponsible environmental behaviors. Inarguably, the most important factor affecting the behaviors is the attitude (Bradleyvd, 1999). The family members living in natural environment have great effect on learning the environmental, social and cultural notions. Moreover, learning by the way of these influences may be so negative that cannot be corrected by formal education.

The fact that the world we live in will be damaged less and its lifespan in a healthy way will be longer if we raise more aware generations has re-emerged the importance of environmental education. Environmental education has great importance in paving the way required for solving the environmental problems. Therefore, Environmental education is a process which raises determination values and skills on taking on action to solve the environmental problems as well as to add to raise the individuals' awareness knowledge (Gezer, 2006).

1.5. Assumptions

1. The knowledge given by the students, participated in this research from secondary schools in Libya, expresses their awareness of Climate change.
2. Lack of environmental awareness among students reflects negatively on their actions and their behavior towards the Climate change problem.

1.6. Limitation

This research was conducted in the limits mentioned below:

- The research is limited with the students from Libya, who are studying in secondary schools (Males and females) in Libya 2015-2016 academic years.

- The research is limited with 500 students, who study in high school in Libya.
- The research limited to high school students who live in rural and urban areas.

CHAPTER II

RELEVANT LITERATURE

2.1 The Arab region studies

The basic effects of scientific research can be transformed into inputs and outputs. Inputs can generally be divided by the number of research and expenditure on scientific research. The rate of expenditure on scientific research as a percentage is very low in the Arab region, it is about 0.2% and the global rate is 1.4 percent. In Japan it is 4%. The rate in the Arab countries is the lowest in the world, this cause less awareness in the area, state of inputs in environmental scientific research can generally be described as a situation in which many Arab scientists, whose numbers are increasing, face inadequate resources, exacerbating this problem.

2.1.1 The extent of awareness air pollution of the students in University of Bahrain

The study was conducted on (394) students from the universities of Bahrain and the Arabian Gulf and showed the results: The study was conducted by the University of Bahrain,

1. A high percentage of students showed a positive awareness of the subject of air pollution.
2. There are no statistically significant differences between students' awareness related to gender, residential area and school level.
3. There are differences of statistical significance for students' awareness of air pollution in favor of scientific colleges.

2.1.2 The extent of environmental awareness among university students

In this study, the researcher conducted a questionnaire on 37 individuals and the required to answer as agree or disagree. This study was applied to a sample of (76) students in university of Alexandria, Faculty of Arts. The results showed that most of the sample has knowledge of environmental awareness, but in contrast most of them do not know the causes of this awareness or the procedures that should be

followed to reduce it either by the government authorities concerned or organizations and bodies or even at the level of individuals.

2.1.3 The importance of environmental education

A study aimed at the attitudes of teachers and teachers of science and secondary school principals in the Riyadh Educational Zone for boys towards the importance of environmental education and some environmental problems (Faleh, 1996). To achieve the goal, the researcher prepared a questionnaire covering four areas:

1- The importance of environmental education.
2- Air pollution.
3- Water pollution.
4- Soil pollution.

The sample of the study involved 194 of teachers and teachers of science and secondary school administrators, and the results showed that There were no statistically critical contrasts the middle of those three gatherings in the level of Regard of a extend about study regions.

2.1.4 The attitudes of middle school students towards the environmental problems in the K.S.A

A study aimed at identifying the attitudes of middle school students in the cities of Riyadh and Dammam towards the environmental problems in the Kingdom of Saudi Arabia. In order to achieve the goal, the researcher prepared a questionnaire consisting of (24) questions, in order to know the views of the students about four environmental problems namely, water pollution, air pollution, desertification, and extinction of wildlife. The questionnaire was distributed to 400 students in the first grade and 400 from the third grade in Dammam and Riyadh (Sulieman, 1994). The study showed the following results:

1. There are statistically significant differences in the views of the first grade students and the average third grade students in the two cities for the benefit of third grade students.

2. There are no differences of statistical significance in the views of third - grade students in Riyadh and third - grade students in Dammam towards environmental problems.
3. Courses of intermediate materials did not supply to the growth of environmental awareness between students.

2.1.5 The level of environmental enlightenment of university students in K.S.A

The researcher studied the goal of determining the level of environmental enlightenment among the students and teachers in the Faculty of Applied Sciences, Umm Al-Qura University. To achieve this goal, the researcher designed a list of environmental concepts, which included three main fields: Of the pollution. In light of this, a 44-question type of test was designed. The test was applied to a sample of 84 male students and 94 female students from the Faculty of Applied Sciences (Al-Mazroui, 1997). The results of the study were:

1. The general level of environmental enlightenment in the sample according to the academic specialization or by the fields of environmental enlightenment is not at the level of writing required for the overall test.
2. Differences of statistical significance do not exist between the average achievement of teachers and the level of achievement of female students according to academic specialization, except for the allocation of educational physics, which is indicative for the benefit of female students.
3. There are no statistical differences between the average achievement of teachers and the level of achievement of female students, teachers and according to the fields of environmental enlightenment, except the field of environmental energy sources, is indicative for the benefit of female teachers.

2.1.6 Awareness level of some environmental risks among students of the Faculty of Education, of the Scientific Departments in Makkah and Jeddah (Gim Seron, 2014)

The study was limited to:

1. Apply a measure of awareness of some environmental risks, which includes an objective test of the type of multi - test prepared by the researcher for this study.
2. A sample of students of the first and third division of the Faculty of Education for the scientific sections specializing in biology and chemistry has been selected the third band because of the absence of a fourth division specializing in revival in the Faculty of Education in Mecca has excluded the second band to the intensity of approaching the time of the first band and the third band.
3. Limited to some cities in the Western region (Mecca and Jeddah).
4. The tool of study - with the help of God - was applied in 2002 - 2003.
5. Taking statistical significance to test the hypotheses at the level (0.05).

The survey conducted by the researcher on a sample of students shows that the environmental level depends on the educational administration and the family, both of which direct the student and the student morally and educationally. These two factors are essential in creating an appropriate environmental awareness to live in a community..

2.1.7 Environmental education in primary schools from the point of view of teachers

City schools of Constantinople model

The researcher hypothesized that there is a lack of harmony between the theoretical and application in relation to the reality of environmental education due to several factors, including insufficient qualification of teachers in environmental issues. The educational curricula do not take into consideration the environmental reality of Algeria. It is applied in schools.

2.1.8 How important the concepts of environmental education for sixth grade students in Riyadh, and how they deal with them from the point of view of teachers

This study was conducted in Riyadh, and the problem of research was identified in a key question: How important is the environmental education concepts

of the sixth graders in mathematics to the extent they deal with them from the point of view of their teachers regarding the cognitive, emotional and skill aspects?

The researcher wanted to know whether there was a statistically significant relationship between the degree of importance of the concepts of environmental education and the degree of treatment of sixth grade students with the same concepts (Musaad bin Abdullah Al – Noah, 2005-2006).

The researcher also wanted to know whether there were statistically significant differences in the answers of the sample according to the variables of the academic qualification and experience in primary education and specialization and the location of the educational supervision center.

Therefore, the researcher used the descriptive descriptor, where he was interested to know the views of all members of the sample using the questionnaire. The study reached a number of results:

- The concepts of environmental education distributed to the aspects of knowledge, conscience and skills are all important for sixth graders, and their approach to these concepts is relatively uneven.
- The study also showed that there is a relationship between the importance of the concepts of environmental education and the degree to which sixth graders deal with the concepts mentioned above.
- The study also showed differences between the responses of the sample of the study by the variables of specialization and the educational supervision center.
- There were no differences between the responses of the sample members by the variables of scientific qualification and experience in primary education.

2.1.9 The Relationship between School Activities and Environmental Awareness, Theoretical Frameworks, Role and International Experiences in Egypt in 2005

The main question of the study was: “What is the role of school activities in the environmental development of the students in Egypt?” And “what are the experiences of some developed countries in this field?” (Japan, USA and Japan)

The researcher asked some sub-questions such as: Environmental awareness? What is the role of school activity groups in developing environmental awareness? How to benefit from the experiences of States?

The results of the study showed the importance of the role of school activity groups in raising the level of knowledge and awareness of the environment in primary schools in Egypt (Isam Tawfiq Gamar, 2005).

2.1.10 Analytical study of the content of the reading books for the primary stage in the field of environmental education in the Kingdom of Saudi Arabia

The problem of the study appeared on the reality of environmental education in the reading books and archiving in the primary stage. It began with a fundamental question: What is the extent to which environmental concepts are included in the reading books and archives of the primary stage in the Kingdom of Saudi Arabia?

The researcher analyzed the reading books and archives in the primary stage in order to identify the reality of the concepts of environmental education in the reading books and archives, according to a specific standard of 31 concept, in order to know and identify the most books containing the environmental concepts and identify areas more frequency and focused on. (Asma Ilyaas, 2005). The results of the study were as follows:

1. The size of paragraphs related to environmental concepts is commensurate with the nature of the material being studied and the nature of their objectives.
2. The study showed that the environmental concepts received a great deal in the books for the fifth grade followed by books for sixth and fourth grade.
3. Most environmental concepts have been implicitly and implicitly included in these books.
4. Headlines received only 30% of the totals on environmental concepts.

2.1.11. The role of social institutions in promoting environmental awareness, a doctoral dissertation for the Department of Psychology and Educational Sciences

The research question focused on the importance of hygiene as a behavior depends mainly on raising the child to his understanding as followers. The researcher asked a set of questions such as: “What is the reality of behavior and behavior towards environmental problems?”, “What is the reality of the contents of educational and environmental programs and their role in promoting environmental awareness?” and “What is the role of social institutions in promoting environmental awareness?” (Umhammed Drzoumi, 2007)

The researcher used the analytical descriptive method to examine the contents of the environmental education program through the general education stages. He presented and analyzed the contents of the environmental education booklets and adopted the questionnaire as a research object using two models, the first related to the environment inside the house and the second one the environment outside the home on roads and in the streets. The researcher compared the results which have been found in both primary and secondary schools. The results of the study showed the following:

- There is a link between the environmental behavior and the socialization of students.
- Not only is the upbringing of the child to understand the proper environmental behavior of the family, but also the essential role of school and community institutions.
- The study showed an imbalance in the educational curriculum for environmental education in schools.

The researcher recommended at the end of the study to focus on teaching the proper environmental behavior of students, through the renewal of educational curricula and more space for environmental education curriculum in educational courses, the need to spread environmental awareness in the community, which reflects positively on students through their families at home.

2.1.12. An educational proposal in environmental education in the Republic of Yemen

The problem of research was that there was a low level of performance of students and teachers in the environmental side and a lack of the nature of courses of environmental education because it is not related to environmental problems in Yemen. The study tried to answer the question: “How effective is the environmental education program taught in Yemeni schools in solving environmental problems?” This question is divided into some other sub-questions such as: “Does the environmental education approach to affect students' behavior towards environmental issues?” “Does the curriculum cover all environmental problems in Yemen?” And some other questions related to the standards of quality, efficiency and performance of teachers and training courses, rehabilitation of teachers and workers in the field of environment in general (Abdullah Ghaleb Abdul Karim Al Hammadi, 2005).

From the Faculty of Education at the University of Aden, a sample of about 160 students was enrolled in the environmental education course. The researcher analyzed the content of the environmental education courses in three educational colleges using a structured analysis tool to analyze the state of environmental education of the teacher in the light of certain criteria. The results showed the following:

1. The content of the courses is narrow, non-comprehensive and unbalanced in its handling of the cognitive, skill and emotional components. It is devoid of most of the environmental problems in Yemen and is one of the basic elements of the environment.
2. Courses do not take into account many professional standards and knowledge acquisition skills.
3. There is a difference in the test of achievement of environmental culture as well as in testing attitudes towards environmental problems in favor of the experimental group.
4. There is no difference between teaching the unit through the cooperative learning method or through the lecture.
5. There are teams dedicated to chemistry, biology and geography students.

The researcher concluded that a general approach to the culture of ecology was acceptable, although there is a lack of planning and implementation of the environmental education curriculum, as well as a lack of encouragement or learning for the environment.

2.1.13. A training program in the development of environmental culture and positive attitudes towards the environment of the students in Faculty of Educational Sciences and Arts of the International Relief Agency Jordan

The study aimed to know the effectiveness of the training program organized by the Faculty of Environmental Education and the development of environmental culture and positive attitudes towards the environment. The sample of the study was 74 female students of the second year. The sample was randomly divided into two sections, 37 students participated in the life sciences course. The training program consisted of 12 training hours, divided into 4 weeks at 3 hours per week, followed by an achievement test and a trend scale, which showed statistically significant differences. Indicating the effectiveness of the training program applied to the experimental group versus the control group (Dr. Amal Najati Ayash ve D. AlAwdah Abdul Jawad Abu Sneineh, 2013).

2.1.14. Global warming awareness among the University of Bahrain science students

This study was designed to examine familiarity with worldwide warming "around learners of the employees of science toward that school of Bahrain. What added up to 143 science learners were screened utilizing a questionnaire coating three viewpoints for worldwide warming, including causes, impacts and results. Those examine incorporated 51, 28, 40 Furthermore 24 people from biology, chemistry, math Furthermore physics, individually. The effects indicated that 55 ± 10. 18% of constantly on scholars who were screened effectively replied inquiries from claiming 51 ± 10. 28% were in the main year, same time 60 ± 7. 4% were in the fourth quite a while demonstrating An immediate certain impact about college training. A critical unwavering quality ($p \leqslant 0.05$) might have been recorded between those initially and fourth quite a while reactions. The outcomes demonstrated that fourth-year science scholars were those greater part knowledgeable, an actuality that

Might be attributed of the academic educational program. Therefore, the investigation prescribed the reconciliation of Ecological ideas for school curricula to every last bit people in any case of their academic specialization so as to increment Ecological mindfulness (Journal of the Association of Arab, 2017).

2.2. Foreign Studies

Relatively, students' climate perception transform rooted in different approaches has more diverse overseas studies. According to Ojala (2011) used the term 'hope', this hope is explained by the cognitive factor of emotion, to study the participation of students in pro-environment behavior affected or not. In her built-in empirical model, two types of hope explained, which are, denial hopes and constructive hope. Valuable trust comprises from claiming three basics, for example, trust self, trust others Also sure reappraisal, same time the absolute who need refusal would like might dismiss those result about quickly progress for environmental. The research completed with that constructive hope could improve behaviours of pro-environmental as such behaviours are constrained by 'denial' hope. According to Dijkstra and Goedhart (2012) in climate change, attitudes that are commonly associated with scientific students' attitudes are implicitly linked to their pro-environment behaviors. The study exposed that younger student with higher science grades were keener to participate in pro-environmental behaviours. However, environmental action towards climate change usually had a poor positive relationship with scientific attitudes.

2.2.1 Overseas studies

Several studies (Boise, Skamp, Stanisstreet, 2009, Malandrakis and 2009) have adopted a new quantitative approach that examined the relationship between students' desire to take specific actions in favor of the environment and their principle in the value of those activities in reduction of global warming. The effectiveness of environmental education can be explained by specific measures by measuring the gradients between "normal work readiness" and "natural resistance to action". These studies concluded at the same time that students were keener to take actions involving least harassment or an integral part of good social practices for example shutting down unused recycling as well as electrical appliances.

Additionally, some investigations have concentrated on measuring learner learning and understanding for environmental change or worldwide warming through demonstrating by drawing those delineation (Koulaidis&Christidou, 1999; Shepardson et al,. 2011) or through using qualitative and quantitative researches (Boyes, et al., 1993; Liarakou et al., 2011). In general, there are different misconceptions about change of climate, global warming in the minds of students. Familiar misconceptions have been concentrated on in these studies, for instance the relationship between the effects of ozone layer and greenhouse.

During to environmental behaviours concerning, environmental investigations for secondary school students and youth using measures which counting responsibility role, control locus beside knowledge and attitudes, the place 'control locus' may be the reaction/sense of a singular that fails to offer control again the results. (Fielding ve Head, 2012). A significant factor is affecting the intention to work. According to Fielding ve Head (2012), Rotter assured that the principles of an individual's actions can result in a reflection of an internal control locus while the opposite sense such as outcome powerlessness, which can reveal an external control locus. The study noted that positive environmental intentions and behaviors were linked to the realization of greater societal responsibility. Those examine and finished up that youngsters with the larger amount of Ecological interest Also knowledge, and the inside control locus from claiming Ecological control, bring stronger natural proponents Furthermore take part over pro-environmental practices additional proactively.

Jones et al. have found In measuring students' Ecological awareness, the New Ecological Paradigm (NEP) demonstrations a critical work. This device around need been broadly adjusted will measure attitudes, convictions what's more qualities perspective. 'Environmental worldview' demonstrates of the philosophy, standards as well as ideas that helpfully structure discernment of the unique surroundings. (Wong, 2012). NEP investigates the cooperation the middle of unique and the earth. Nature recognizes constrained resources, deliberately adjusted and liable will human mediation. (Petegem ve Blieck, 2006). However, the NEP scale was originally intended for adults and the public (Dunlap et al., 2007). The revised version tapping 3D of environmental worldview as namely (Manoli et al., 2007):

i. nature rights
ii. eco-crisis
iii. human exemptionalism

For that point from tackle of claiming issue for Ecological education, Above all else we must perceive some of the newer thoughts encompassing the advancement from claiming values "around Youngsters. It may be known as the particular idea that has been suggested by "Nature-Deficit Disorder". Those term need been changed by Richard Louv to as much book, final one kid in the Woods: sparing Our kids from Nature-Deficit Disorder, What's more alludes of the hurtful pattern for kids vanishing starting with way. The reason for NDD need aid the sum around us. For instance the previously stated innovative developments gatherings give a significant number purposes behind Youngsters to sit tight inside. In addition, there might have been developing concern over those "strange danger" alternately the idea that Youngsters were less averse to a chance to be stole alternately abused if they were outside (Graham). In spite of those kidnapping of children, they need aid rare, Loew says that that's only the tip of the iceberg consideration ought to a chance to be paid to innovative incitement and the act of kids would lost due to this nonsensical alarm (Graham).

Finally, there is An misfortune of the regular nature's domain The point when organizations trade staggering scene for excess edifices. Though kids sight the outside globe Similarly as terrifying alternately ordinary, there will make no possibility to get them to take off the hardware behind. Adolescents' Changes of attitudes are significant caution signs of long term social change (WrayLake 2). In this study, attitudes to the environment have been surveyed for 30 years. unluckily, current adolescent views observed a negative views. In particular, behaviors have declined towards conservation. The need for change or accountability was higher in the 1970s and has fluctuated since then, but it is now much less than 30 years ago (Lake Rye, 11-14).

One of the noteworthy elements is that the physical feeling is contrary to the concept of conservation of the environment. The study showed that the times when the material was lower, the conservation positions were higher and vice versa (Wray Lake, 15). At present, material values among high school students are on the rise, and environmental care is not concerned. Since adults generally affect children,

it may not be surprising to know that trends among adults are very similar to trends among adolescents. Surprise or not, though this creates one scary picture. With regard to the theory of the replacement of generations, this means that the current views of young people will continue with them in adulthood, and that adults add the problem only by promoting these values. If this continues, the present issues with the environment will only get worse. This shows why it is essential to apply more attempts in the movement for environmental education.

2.2.2. Overview of developments in environmental education, information, awareness and training in the Asian and Pacific region during the 1990s

It identifies trends as well as patterns of environmental education in the informal and formal sectors, government plans and programs that have been undertaken, as well as non-governmental organizations carried out by regional organizations as well as international organizations. The basic needs for environmental education in the area of information and information related to environmental education were also discussed with special attention to constraints and issues requiring greater awareness.

The enter universal assemblies for nature's domain put An secondary esteem for state funded awareness, instruction Furthermore preparing and getting data through screening Concerning illustration crucial components for those victory of the assemblies..

In the 1990s, "environmental science" was included as a guide for separation into middle school curricula in some countries, for example the Republic of Korea; recognition of the general perception that environmental education for young students was the most important means of resolving persistent environmental pollution (Kang, 1999). With the purpose of raise the awareness of young students and to protect the environment and to develop environmental perspectives, the Republic of Korea appointed 63 schools as environmental schools in 1985 and published best practices in 26 additional schools in 1999 (Green Korea, 1999).

Natural instruction will be joined of the organization security about general population orgs What's more instructive organizations inside the individuals' republic of colombia. This might have been formally included to An rundown issued

Eventually Tom's perusing the national office during the national gathering looking into Ecological instruction clinched alongside 1992. Through games, varying media wage and the contemplate for regular systems, natural instruction might have been directed. Natural ideas are brooding to exactly courses for example, such that physics, chemistry, science What's more geology. As stated by (UNESCO-Brouwab, 1997), the sum together, educators have a tendency to utilize neighborhood cases with assistance extend natural Comprehension "around understudies. In the south pacific sub-region, which may be acknowledged a little island country, a major attempt is aimed at injecting environmental education into different materials within primary and secondary school systems. The secondary school curriculum focuses heavily on environmental studies being developed either independently, as in the South Pacific Regional Environment Program (SPREP) (Ravuvu, 1998).

As the Asia-Pacific region welcomes a new millennium, obviously, a new increase of interest, with activates that done enthusiastically to put education of environmental with training and communication in the top of the public agenda in this region’s countries. Although much work and achievements have been accomplished in the 1990s, there are still many challenges. A barriers of social, economic and cultural placed on them by poverty and underdevelopment made many countries of the region struggle to overcome those issues, and together confront to further challenges of economic globalization, the main concern that given to issues of environmental and their conservation is endangered of being ignored for more prompt benefits with needs to survive. Needs environmental awareness and media professionals in the region, therefore, to be attentive and active to make sure that governments, industry and other key actors in sustainable development continue to take into account their international and national commitments to environmental conservation, as well as to ensure that adequate investments of resources, time and attention are made to enhance the accomplishments of the 1990s.

2.2.3. Environmental education and sustainable development from a curricular perspective

In order to protect the future of any human civilization and its welfare, we must rely heavily on education as an element and a basic tool to know the world around us and solve its problems by knowing the land and its limited resources and

protecting the environment. It must be recognized that the scientific institutions are necessary for their use to solve the problems of the environment Asoh with other sciences such as physics, Through the creation of projects organized or coordinated aimed at improving the environmental efficiency of learners.

CHAPTER III

THE ENVIROMENT & CLIMATE CHANGES IN LIBYA

Climate change is an important environmental issue, a scientific fact and a long-term global problem, involving complex interactions with political, social, environmental and economic implications. The main cause of persistent climate change is human activity and its abuse of available natural resources, which has led to environmental imbalances, as well as other natural causes. they do not contribute much of the total greenhouse gas emissions due to the fragile economies of these countries in the face of the effects of climate change to the multiple pressures added to the capabilities of adaptation is weak. On the other hand, many of the economies of the world are still dependent on sectors that are vulnerable to climatic conditions such as agriculture, fishing, forestry, the rest of natural resources and tourism, especially since scientific research has shown that even energy resources such as oil and others, which are the arteries of the economy, Climate change and irrational consumption, which puts the global economy in a real challenge, forces all countries of the world to take appropriate measures that allow at least to adapt to this phenomenon as the option is far from all calculations because climatic data currently indicate that the effects of these climate changes will remain for several consecutive centuries.

Climate change is one of the main challenges facing humanity. Attention to this phenomenon began at the beginning of the 19th century. Scientists and researchers in the field of climate and land science have confirmed that the Earth's climate is constantly changing in a way that will negatively affect the lifestyle of the population on Earth in all respects. That is why the researchers point at this for a number of reasons including.

In its Charter on the “Protection of the Earth” the United Nations referred to climate change as directly or indirectly attributable to human activity leading to a change in the composition of the global atmosphere, and to the natural volatility of the climate, in which human beings are the main actors in that change, as well as natural factors.

The Intergovernmental Panel on Climate Change (GIEC) has considered climate change to be all forms of change that can be expressed as a statistic, which can last for decades, resulting from human activity or from the internal interactions of components of the climate system. This definition adds to the characteristic of the continuity of the phenomenon of climate change, the negative effects of which will affect future generation for years to come.

Most of the climate changes observed over the past 50 years combines human activities. Most climate change definitions focus on the causes of this phenomenon with the emphasis on natural causes, and by the internal interaction between elements of the climate system. It is, therefore, possible to distinguish between internal and external influences.

There are many reasons for the evolution of climate change and the emergence of so-called global warming. In general, these causes are natural and human. Human activity is the main cause of this sudden change by releasing the emission of greenhouse gases in the atmosphere, especially carbon dioxide and methane. These gases are natural and necessary for life as they maintain heat through "global warming." However, their uncontrolled emission leads to an abnormal increase in temperature and thus a change in the entire climate system.

The concentration of these gases in the atmosphere has reached its maximum level due to the increase of factories in number in a century and a half and the significant increase in human consumption of energy.

The negative effects of the industrial revolution witnessed by the world soon after the scientific renaissance in the 18th century were not one to appreciate at the time, as much as its positive effects were felt in various social and economic aspects. Now that the same human mind is back, thanks to the technological advances alarming and declaring that the world is now suffering from the remnants of contracts, the progress has risks beyond its benefits, as it first destroys what it has been built. The toxic gases emitted from factories, waste and excessive and irrational consumption of natural resources are among the most direct causes of environmental pollution and the exacerbation of global warming.

The economic sector in its various fields (tourism, agriculture, water resources, etc.) is most sensitive to the potential impacts of climate change, directly or indirectly, making any economic process that does not take climate and environmental factors into account is subjective and futile. It is a means of development, but an end in itself, and perhaps development is ultimately the pursuit of the development and enrichment of the environment. This development is consistent with the conditions and controls of the environment where the countries of the world today apply the concept, through the consuming natural resources in non-renewable quantity to achieve the objectives of development without considering the needs of future generations for these resources.

3.1 The Environment

"Environment is the whole of concrete beings, events and energy" (Tont, 2001). "Environment is the whole of the physical, chemical and biological factors which have effect on the lives of living beings in a definite habitat. Briefly, all the factors, affecting the lives of living beings, are their environment" (Yücel, 2006).

Human, environment and society are the notions intagrated closely with each other. The environment means, in dictionary, "something surrounding or enclosing" (Marshall, 2000 ve Erjem, 2005).

"The environment is the surroundings or circumstances where living or non-living beings live and maintain their vital activities" (DPÖ, 2006).

The environment is partitioned into two gatherings as living and non-living. The living environment is the various living creatures which influence, straightforwardly or in a roundabout way, living creatures and which have the same physical encompassing with them. Then again, the non-living environment is the solid surroundings, for example, rocks, water and so forth on or in which the living creatures keep up their lives (Yücel, 2006).

The living components of the environment are people, plants, creatures and smaller scale life forms. Furthermore, the non-living components of the environment are the characteristic creatures or the creatures made by the people, for example, air, water, soil, geological developments, structures, spans and so forth. (Yıldız, Sipahioğlu ve Yılmaz, 2000; Başal, 2005).

The environment of a living being is the encompassing where it keeps up all its organic, social, social and monetary exercises. In the blink of an eye, the environment is the territory where all creatures live (Başal, 2005).

Notwithstanding the environmental arrangement, there is additionally the grouping in view of the people. Yücel has isolated the environment into two gatherings as physical and social environments.The environment where all the living creatures live in and see physically their own being, angles and capabilities is the physical environment. The physical environment could be isolated into two gatherings as regular habitat (mountains, oceans, streams and so forth.) and artifical environment (urban communities, towns, dams and so on.). The environment which has not influenced by the people in its creation is the common habitat; and the environment which has been changed by the people as per their motivations is the artifical environment (Yücel, 2006).

As indicated by Görmez (2007), the environment is characterized in two viewpoints: One is the indigenous habitat which has not experienced any sort of progress in light of the fact that there has not been any impedance by the people; and second is the artifical environment which has been made by the people inside the regular habitat to use it amid the procedure of social and monetary advancement experienced from the earliest starting point of the humankind to today.The environment is an entire of the shared relationship and collaboration with all the living creatures as plants and creatures. As per another definition, it is an encompassing where the people keep up their social, natural and synthetic exercises (Keleş ve Hamamcı, 2005).

The environment can be characterized as all the outer variables; as physical and social components which influence the living creatures and decide their arrangement and lives; and as every one of the elements which have impact on the lives of life forms (Tokay ve Yüksel, 2003).

Ertürk and Başal feel that the environment is the outside encompassing where the living creatures keep up their relations amid their lives (Ertürk, 1996; Başal, 2005). As per the definition by Aguesse, "the environment is the entire of physical, compound and organic components and social components, which have prompt or long haul impacts on the exercises of people and the living creatures specifically or

in a roundabout way" (akt. Erer, 1992). "The environment is the entire of solid creatures, occasions and vitality" (Tont, 2001). "Environment is the entire of the physical, compound and natural variables which have impact on the lives of living creatures in a positive living space. Quickly, every one of the variables, influencing the lives of living creatures, are their environment" (Yücel, 2006).

The people, the environment and the general public are ideas having cozy association with each other. Since the environment is not just the world outside of our bodies, yet additionally the place we influence, we get influenced, we shape, we intagrate with our internal universes and in the meantime, we understand ourselves (Kavruk, 2002). In a general importance, the environment could be characterized as an encompassing where the living creatures live, and which they influence and are influenced in various ways they are relied on upon by the key conditions. The people are additionally a piece of the environment, and they can keep up their lives because of it (Yıldız et al., 2005).

3.2. Environmental Problems

Recently, globalization has affected environmental problems in terms of their survival and impacts in addition to the economic development. After temporarily noting the international awareness growth in environmental problems, this entry first examines the nature and global scope of environmental problems, and shows that human creatures are more and more approaching against global environmental limitations, thirdly, the global political and economic forces that generate and deteriorate environmental degradation on a global scale and finally conclude concluding observations (America's Climate Choices, 2010).

Human beings have encountered bad environmental conditions throughout history, but environmental problems have turn out to be more general and able to be seen with both urbanization and industrialization. By the 1960s, factories and dense urban living conditions air and water pollution concerned rising notice during the last century and known as major problems. Worries over pollution of air and water speedily increase to a range of other conditions such as erosion of soil, contamination of pesticide and elimination of Forests, which cause declining animal species and populations (Jorgenson, A., Dick, C. ve Shandra, J, 2011).

"Green parties", considered important in Europe, were formed in Rio de Janeiro in 1992 when environmental problems were the concern of both governments and citizens around the world. In 1972, at a UN conference on the human environment on environmental issues, this was considered a major international issue in the United States (Dunlap et al. 1993; Frank et al., 2000).

Environmental problems have often been ambiguous and there are problems in how they appear and explain them through the basic concepts of the environment and the environmental use of humans (Jorgenson, A. ve Clark, B., 2009).

Ecologists note that environment gives Numerous “goods as well as services” to people (de Groot et al., 2002), yet all the we manage to rearrange these under three all capacities that it performs to human populaces Also every last bit other species (Dunlap & Catton, 2002). In nature's turf gives us with those assets necessary to life, starting with clean air What's more water should nourishment What's more shelter, and additionally the characteristic assets utilized within streamlined economies. Done giving what ecologists call the “sustenance base” for human societies, nature's turf is serving a “supply depot” capacity. It supplies us for both renewable What's more non-renewable resources, and abuse of the previous (e. G. , water) might bring about shortages and the last (e. G. , fossil fuels) in possibility scarcities.

3.3 Environmental Education

Environmental education is a multi-disciplinary lifelong approach designed to raise the world's population aware of the environment and related issues and who have the knowledge, skill, attitudes, motivation, individual and social responsibility that will contribute to solutions to environmental problems and prevent new ones from occurring. (Moselley, 2000).

The environment is multidimensional, very wide and complex. Therefore, environmental education is also multidimensional, extensive and complex. Hence, the concept of "environmental education" varies from person to person, from organization to organization. At this point, there are different definitions of environmental education. "Environmental education can be defined as the development of environmental awareness in every segment of society, making individual behavioral changes reasonable for the environment, lasting and positive,

protecting natural, historical, cultural, social and aesthetic values and providing effective participation in problem solving" (MEF, 2004).

"Environmental education is the education that leads people to understand the environment, their roles in it, and make them aware of all the factors that affect the environment as much as possible" (O'Gurlo ve Demirer, 2008). "Environmental education is the process of developing the attitude, the standard of governance, knowledge and skills to protect the environment, it is also the process of presenting environmentally friendly behaviors and achieve the results of all these" (Öztürk, 2008).

As it is understood from all these definitions, informing and raising awareness of the environment, shape positive behaviors in humans the protection of the environment, teaching that pollution and protection are possible just with efficient and radical education (MEF, 2007; Bayazıt Hayta, 2006 ve Sülün, 2002). Hence, environmental education is actually aims at environmental attitudes, behaviors and awareness. Thus, in the research, the effect of the interdisciplinary approach on the students' attitudes and behaviors about the environment has been examined.

There are two important movements effective on the creation and development of environmental education. These movements are environmental and educational movements. In parallel with these movements, natural studies, non-formal education and education of protection, which have contributed to the development of the environmental education, have also emerged. These educational movements have contributed greatly to the progress of environmental education (Marcinkowski, 2006). The importance given to environmental education has increased in the 20th century. The studies conducted, at first, in a local extend and in universal extend later. In the conference held firstly by UN in Stockholm in 1972, where environmental education has gained a universal dimension. The 5th of June, the beginning of this conference, is celebrated as “World Environment Day” all over the world.

In accordance with the conference in Stockholm, a survey, named “Resource Evolution for Environmental Education: Requirements and Priorities of The Me member Countries” was conducted by UNESCO Environment Office in 136

countries in 1975. According to the results of this survey, environmental education was inefficient in terms of quality and quantity. In order to remove this inefficiency, International Environmental Education Program-IEEP was applied in cooperation with UNESCO and UN Environment Program (UNEP). Again, in cooperation with UNESCO and UNEP, Environmental Education Conference was held in Tiflis in 1977, the first conference in this field.

The Manifesto and Proposals of Tiflis Conference determined, at the national and international level, the general framework of the environmental education and its qualifications, aims and pedagogical principles. In International Environmental Education and Raising Congress held in 1987, international strategies for environmental education, to be applied in 1900s, were detected within the scope of Tiflis Manifesto. In the UN Environment and Development Conference, held in Rio de Janeiro in 1992, IEEP was assigned to bring sustainable development to education. The UN Sustainable Development Commission held a conference named "International Environment and Community Conference: Education and Public Awareness for Sustainability" in Salonica in 1997 where the principles of environmental education were clarified.

3.4 Environmental Awareness

It is the sensibility and interest of the individuals against environmental problems. Environmental awareness has been defined as "the reaction of the individual or society against environmental problems they encounter" (Altın, 2001).

Individuals should be calculated in environmental knowledge and awareness from the very young ages. The more the new generations are raised as environment friendly from the time of kindergarten, the more the protection of our environment will be guaranteed. Thus, these environment friendly individuals will have more chances to make progress in their career and be successful. Houses, local community and schools are the three main areas where environmental education is provided. All the efforts made in these areas should be in mutual relationship which enables the solutions to be produced depended on environmental awareness, and also, enables the environmental problems to be comprehended. The protection of the delicate balance between the environment and the human is under the responsibility of the human (Dinçer, 1999).

The more the mass media gives importance to environmental issues, the more these issues will stick in humans' mind. However, this would be available only when environmental issues are treated profoundly and by seeking solutions, instead of being treated with its sensational aspects just when an environmental disaster happens (Yumlu, 1998)

3.5. Human Attitude and Behaviour towards Environmental Problems

The approach is a condition of mind of willingness that affects the responsiveness of persons to everything linked to the port of Al (1935). The position of worry for the environment stems from the persons concept of self and the degree of recognition of himself as an essential part of the natural environment. Behaviours are what people do, whether it is environmentally appropriate or not (Hernandez ve Monroe, 2000). Behaviours are generally supported by knowledge and attitude, but direct contact of knowledge to attitude and behavior does not always exist (Monroe ve Grieser, 2000).

It is necessary to begin to develop positive principles on the road to the early childhood environment, since patterns of behavior in hidden years are promoted and strengthened. These results lead to positive environmental behavior directed at the individual and society, leading to a sense of responsibility and nurturing the environment, while these behavioral patterns pass on to the next generation. According to Little Dyke (2008) to encourage children and develop their sense of relationship is the main challenge of environmental education in the environment, which in adulthood leads to positive management of the environment. Therefore, with a sense of living creatures, the environment is considered with both respect as well as love of nature, environmental protection an incentive to work and a sense of responsibility and concern (Gilligan 1982, Noddings 1984 ve Juujarvi, 2006).

All opinions indicate the fear and unease about the resulting environmental problems resulting in negative opinions and the need to find a suitable solution especially in terms of environment-oriented behaviors and problems (Erten, 2004). In order to prevent these problems, educational systems should be provided and trained cadres of teachers and families equipped to provide an environment for individuals and provide them with the appropriate and positive behaviors that appear in both political and economic aspects

Attitudes are one of the most important factors that guide and orient our environmental behavior. Therefore, students must provide positive knowledge and behavior towards the environment so that they are not sensitive to the environment or create environment problems in the future. Therefore, attitudes are considered one of the most important factors that allow individuals and enable them to display their behaviors. Responsible, reading habits or reading attitudes are undoubtedly also involved in both critical and creative thinking of behaviors. Without a doubt, reading is one of the most effective ways to provide The required method of behavior during the process of education and training to inform and improve at the same time(Odabaş, Odabaş ve oşkun, 2008), to entertain the individual processes, and thus respect many different views and ideas that the reading habits are considered one of the standard of life acquired in childhood and that develop during education (Yalçın, 2006). Fall until the age of 15 must maintain a structured format and plan and promote it at an early age (Şirin ve Soylu, 2003)

Perusing 1-5 books may be accepted perusing “rarely”, perusing 6-20 books may be accepted perusing “moderately”, Also perusing 21 alternately additional books may be accepted “reading An lot” when the amount of books that those persons read over a quite a while may be made under record. It will be stated that absence of direction is those reason the reason people can't procure perusing propensities. Attitudes towards perusing books identified with earth need aid likewise paramount with grasp the connection between common Furthermore social systems, on see those solidarity about mankind's What's more nature relationship, will make mindful of the impacts from claiming Mechanical advancements for earth Also on need majority of the data identified with nature's domain is An life-long Taking in transform (Gömleksiz, 2004).

3.6. Environment in Libya

Libya is located in North Africa along the southern coast of the Mediterranean basin. It is considered a country covered by the desert with 95% and almost 4% only pastures and agricultural lands, with 1% with a total area of 1.76 million km2. There are many challenges in Libya, which are classified as low-water countries, exposed to drought or also exposed to soil consumption. The efficiency of waste management in the state is dependent on the toxic and solid wastes (UNDP, 2013).

In Libya, primary education is compulsory and is provided by a sovereign state. Children between the ages of 6 and 15 go to primary school and then go to high school for an additional three years (15-18 years). Official language in Libya is modern Arabic. About 95% of the Libyan population uses different Arabic dialects of their mother tongue, most notably Libyan Arabic, but also Egyptian Arab, Tunisian Arab and other varieties. English is the most widely spoken foreign language especially by the younger generation and the business community. In addition, there are thousands of young Libyan professionals who have been educated at universities in the UK and Ireland. Italian is still fairly known by some elderly, mainly in the form of Italian-Libyan (Abdelaziz, 2008).

3.7. Climate Controlling Factors

Libya's climate is mainly specified by the dealings with these factors:

3.7.1. Location: Libya lies between 20° to 34° N, has a subtropical climate. The determination of climate whitens different of desert and Mediterranean climates, which caused climate affect by either continental or maritime origin. The coast is getting more efficacious rainfall against the dry in a coastal belt, which is a huge area Covered by the Sahara desert. From a global perspective, the average angle of the sun is higher, averaged at the equator and then gradually becomes less pole poles, with increases of latitude in Libya, the average temperature is progressively decreases.

3.7.2. Landforms: In Libya there are a strong berries that blocking to the passage of more air masses connected with a unlike style of rainfall on either side of the wind and the whip either. Moreover, the Saharan influence extends northwards to the Mediterranean coas because there is no range of mountain that stretching either from east to west or from north to south. In northern of Libya some mountains such as Jebal El- Akhdar have and Jebal Naffusah has limited impacts on the climate (rainfall as well as temperature).

The high rise in difference in positions in comparable latitudes can significantly change the average temperature at approximately 0.64 ° C over 100 m. Thus, those high mountains also stations for plateau (Shexhat (621 m), 16. 5 ° C) are cooler over those low height stations (Zuara (3 m), 19. 8 °

C) during approximately the indistinguishable scope. Aerological impact may be the result from claiming lifting those air from those topsail of the mountains Also ranges starting with those wind passim through it. At the same time as the air move towards a barrier of mountains, it go up usually generate clouds and rainfall on upwind side of the mountains, then the wind descends from the mountains (Scott, 2001).

3.7.3. Distribution of land and sea: All its land territory, bordered by the northern coast of the Mediterranean Sea, there is no an inland lake or rivers in Libya. The Mediterranean Sea plays an important role in controlling climate parameters in the coastal zone. It has an effect on a temperature as well humidity conditions. The comparatively warm Mediterranean Sea region attracts the cool masses of the occasional Arctic sea air, the Arctic sea air of the Atlantic Ocean and continental air from Europe. This air mass is quickly shifting, particularly between Novembers to January, when the Earth is cooler than the sea. The impact of the Mediterranean Sea on the land areas is normally low in the south. The interface between the Mediterranean and the Sahara is the basis of the climate in Libya

3.7.4. Air pressure and wind belts: Wind patterns that are distributed by the distribution of air pressure or annual rainfall and causes of precipitation. Winds are created by variations in pressure of air as well as weather systems, for instance weather interfaces and storms striped by patterns of wind. Internationally, the high pressure belts of semi-tropical, placed close to 30 degrees north and scope need aid responsible for various deserts. in the world. The trade winds dominate the areas between the international trade zone and the subtropical summits.

The average latitudes are mainly between the subtropical highlands and the sub-polar bottoms located within the western wind belt. In the tropical region there is a durable belt of low pressure due to heating and strong load currents. In the north and south of this belt, subtropical elevations are formed in descending air block belts, and go further pole ward (Martin, 1992).

In winter season, pressure built has six important features be able to be recognized, each of them role a major function in the weather over the northern desert:

1- The rise of the Sahara is an extension of the anti-Azur race.
2- The Arabian rise also part of the high pressure built in subtropical.
3- The Balkans are high in composition with a large antiklon over Central Asia.
4- The eastern Mediterranean and the low pressure region above the central.

3.7.5. The equatorial trough over central Africa: The ITCZ14 (Griffiths ve Solomon, 1972). At the start of winter season the high pressure latitude with the horse belt and steadily move south and arises from the Atlas Mountain Azores south and on the shots plateau, they structure a high pressure zone with a high pressure small area on the stones stretching before it. The slope of the pressure reaches the orbital belt, meaning that the trade between the north-east and the Mediterranean Sea to the country during the summer season is transferred south to the desert. It has been replaced by winter droughts extending starting with the north-west to the north african coast, moving along those polar front of the east Furthermore bringing wet atlantic air of the east. (Canter, 1967).

In summer, a fairly accurate opposite of the winter situation is experienced. The following characteristics can be the major features;

1. The Arabian Peninsula depression.
2. The southern Sahara depression.
3. The central Africa high pressure.
4. The ITCZ according to Griffiths & Soliman.

As Azores rises, the sunny weather predominates. Those high point cinch of the horseshoe accordance progressively moves to the north and Sahara desert sorrow south of the tropics, Also exchange the north-east, bringing for it those great summer camp times. However, those hot southern wind (Gebili) before long starts to ruin from the desert towards that steppe. (Kanter, 1967: 98).

The depression which related to air mass movements on Europe affected the region continues in the spring season associated to mass of air travels on Europe (Griffiths, 1972).

CHAPTER IV
METHODS

This section of the study explains the model, population and sample, data collection tool, applying the data collection tool and data analysis of the study which has been conducted to determine “Behavior and attitude of Libyan students studying in secondary schools for climate change”.

4.1. Research Model

In this research, the "relational model" was used. This model was examined to determine the existence or degree of contrast between two or more parameters (Karasar, 2009). This type of research can provide an opinion about the relationship of cause and effect to the researchers. However, it could never make translated a relationship association between foundation and impact. The connection may be successful in identifying and deciding the associations the middle of parameters, which gatherings give essential indicators for high-keyed exploration with respect to these sorts from claiming associations (Büyüköztürk ve others, 2008).

4.2. Hypotheses

H_1: The knowledge given by the students, participated in this research from secondary schools in Libya express their awareness of Climate change.

H_0: Lack of environmental awareness among students reflects negatively on their actions and their behavior towards the Climate change problem.

4.3. Participants and Sample

The population of this study comprised of 500 secondary school students in Libya in the 2015 -2016 academic years. The samples were from the city of Tripoli and Mizda, where schools for boys and girls were chosen as random ones and the questionnaire was distributed in all three classes in secondary schools.

4.4. Data Collection Tools

In this research, the "Personal Information", “Environmental Attitudes and Behavior Scale Test" and “Environmental Knowledge and Information Test” was used to collect data.

4.5. Data Analyses

To analysis the data standards metadata (averages, standard deviation) the frequencies and percentages in order to display the respondents properties, the Likert scale to measure respondents attitudes towards the use of the methods of dealing with food and methods of storing, simple correlation coefficiency of Pearson (Person correlation coefficiency) to figure out the relationship connectivity between some of the social, educational and economic characteristics of respondents and some research variables subsidiaries, and analysis of multiple regression gradual upward and Step wise Multiple Regression Analysis (Forward Solution) to explore the most important determinants of methods of food preservation, which is the dependent variable and calculated collect grades mouthpiece of the extent of knowledge of proper sanitation methods, using statistical analysis (SPSS) program were used. The question that contains subset questions will be analyzed as one question at one table, like one hypothesis.

Descriptive statistics will be extracted through frequency tables, and measures of central tendency and dispersion (mean and standard deviation) for each question to compare it with the weighted average private ordinal variables. The sincerity and reliability coefficiency was calculated for the whole data. In the light of the parametric or nonparametric tests were used. Dividend axes of natural distributions using Kolmujrov Smirnov test (Kolmogorov) and included parametric tests when distributions study axes of natural distributions approach one-way analysis of variance test (ANOVA) was used to compare the three averages and more and test v (t-test) for the comparison between the two means. Also included non-parametric tests when you do not approach the scale of natural direction distributions, Kroskal-Wallis test (Kruskal-Wallis), which is equivalent to a test of variance analysis and test Mann - Whitney (Mann-Whitney) which is equivalent to t test.

4.6. Benchmarks

The researcher used the five-grade Likert scale to measure trends, which gave five degrees to OK, strongly OK to four degrees, and three degrees of the value of the neutral and non-corresponding to two degrees and the degree corresponding to the non-strongly. There are passages of positive content and other relevant content of the negative, where given paragraphs with positive content gradual signs of 5 to 1 for answers OK strongly to strongly show, while given the paragraphs of the negative content graded marks from 1 to 5 answers OK strongly to show strongly.

To measure of stability Reliability tests measure the internal consistency of the scale of the study. Cronbach's alpha coefficient reached 0.90 macro-scale, and Cronbach's alpha coefficiency ranged between values of 0.77- 0.62 Sub-axes, which refers to the internal consistency of the scale of the study. The coefficient alpha values equal to 0.60 satisfactory or superiority (Springer et al. 2000 ve Sekaran, 1984).

CHAPTER V

STATICAL ANALYSIS

5.1. Reliability

A reliable measurement in simple is to monitor the same result measurements when you repeatedly measure the same objects or events unchanged. If the measuring instrument is quite reliable, then it will have an ideal positive (r = +1) correlation with the true scores. Theoretically the measurements contain random error, But the average error is zero. This means that some measurements have errors that make them less than real degrees, but others have errors that make them higher than real scores, with the sum of errors decreasing in the result equals the sum of points that increase errors. Therefore, the random error will not affect the average measurements, but will increase the variation in measurements (General Intelligence, 15, 201-293).

To conduct a stability test questions for the questionnaire we used a reliability coefficiency such as Split half coefficiency or retail midterm or Cronbach's Alpha, Reliability coefficiency takes values ranging between zero and one right, If there is no stability in the data parameter value to be equal to zero, and on the contrary, if there is complete stability the parameter value is equal to true one. When the value of reliability coefficiency closer to true one it will be considered as high stability and low stability whenever it approaches to zero.

The below tables show the reliability for all the questions, Statistics are based on all cases with valid data for all variables in the procedure. The Definition of Missing values are treated as missing.

According to this subscale, information reliability and behavioral scale are seen as acceptable values.

Table 1: Reliability of Sight Scale

Cronbach's Alpha	N of Items
0,223	30

The basic percentages of validity and reliability of the opinion scale were given in Table 1. The Cronbach Alpha coefficiency of view scale was found to be 0,223.

Table 2: Reliability of Knowledge Scale

Cronbach's Alpha	N of Items
0,749	9

The basic percentages of validity and reliability of the information scale were given in Table 2. The Cronbach Alpha coefficiency of view scale was found to be 0,749.

Table 3. Reliability of Behavioral Scale

Cronbach's Alpha	N of Items
0,715	10

The basic percentages of validity and reliability of the behaviour scale were given in Table 3. The Cronbach Alpha coefficiency of view scale was found to be 0,715.

5.2. Frequencies

The Frequencies procedure can produce summary measures for categorical variables in the form of frequency tables, bar charts, or pie charts. This command is used to obtain counts on a single variable's values.

Table 4. Statistics for Gender, Age and Grade

	Gender	Age	Grade
Valid	500	500	500
Missing	1	1	1
Mean	1.51	2.04	1.00
Std. Deviation	**.500**	**1.032**	**.000**

Researcher seeks through frequencies to test knowledge of main data on those who have been the form they distribute; those questions have included all ages, gender and academic level of the students. The total number of forms is 500; the missing forms for all of them are one.

Table 5. Frequencies for Gender

		Frequency	Percent
Gender	Male	243	48.5
	Female	257	51.3
	Total	500	99.8
	System	1	2
Total		**501**	**100.0**

The number of males in the sample was 243 from the total sample of 500 as 48.5%, while in the sample amounted to 257 the number of females by percentage 51.3%, and the lost ratio was 1 forms as 0.2%, as shown in the table 5.

Table 6. Frequencies for Age

		Frequency	Percent
Age	16	200	39.9
	17	139	27.7
	18	104	20.8
	19	57	11.4
	Total	500	99.8
	System	1	.2
Total		**500**	**100.0**

Age was grouped in 4 categories in the questionnaire between 16 to 19 years, the distribution of frequencies were set out in the above table, the frequencies showed that the highest range is for those who are between 16 and 17 years followed by the category of 18 to 19 group and the lost ratio was 1 forms as 0.2%.

Table 7. Frequencies for Grade

		Frequency	Percent
Grade	First year	200	40,0
	Second year	139	27,8
	Third year	104	20,8
	Forthyear	57	11,4
	Total	**500**	**100,0**

Table 7 shows that 40% of the sample participants were *"first year"*, 27.8% were *"second year"*, 20.8% were *"third year"* and 11.4% were *"forth year"*.

Table 8: Frequencies of the Education

		Frequency	Percent
Frequencies of Level of Education	Secondary Students	500	99.8
	Total	500	99.8
	System	1	0.2
Total		**501**	**100.0**

All the questionnaires are in the secondary school level of studies with percentage of 99.8%, the missing values ratio was 1 form as 0.2%.

Table 9: Frequencies of Population

		Frequency	Percent
Population	Less than 500	88	17.6
	Between 500-2000	97	19.4
	Between 2000-5000	101	20.2
	Between 5000-10000	128	25.5
	Between 10000-20000	86	17.2
	Total	500	99.8
	System	1	.2
Total		**501**	**100.0**

The population distribution of the sample has been categorized to five categories as shown in the above table limited to the population of five cities in

Libya, Fasano, Marda, Garian, Alzawyah and Tarablus. As shown the less population in this research Tarablus and Fasano with percentage number 17.2% and 17.6%, the highest population rated to population of Alzawyah city with average percent 25.5%.

5.3 Analysis of the Statistical Hypotheses

5.3.1. Findings based on the first Sub-problem

1. What are the environmental knowledge level and the attitude towards Climate change problem of secondary school students in Libya?

Table 10: Knowledge, Behaviours and Opinions Regarding the Climate Change

	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge	500	9,00	27,00	17,0900	3,27649
Behaviour	500	13,00	42,00	27,4140	6,01223
Opinion	500	42,00	123,00	89,9220	11,08502

As shown in Table 10, average score distributions of knowledge, behaviour and opinion on climate change were given. Having analysed the participants according to the minimum and maximum score values obtained from the related scales, it is seen that they possess average knowledge ($\overline{X}$ = 17,09) regarding the climate change.

It is also seen that positive behaviours regarding climate change are average ($\overline{X}$ = 27.41). Participants' opinions are seen to be higher than knowledge and behaviours. However, this difference may be due to the fact that many of the materials were used to measure the opinion differences.

5.3.2. Findings Based on the Second Sub-problem

1. Is there any significant relationship between the environmental knowledge level of secondary school students in Libya and their attitudes towards Climate change problem in ages and grade?

Table 11: Knowledge, Behaviours and Opinions of Primary School Students According to their Classes Anova Test

		Sum of Squares	df	Mean Square	F	P	Explanation
Knowledge	Between Groups	1,141	3	,380	,035	,991	No difference p>,05
	Within Groups	5355,809	496	10,798			
	Total	5356,950	499				
Behaviour	Between Groups	261,601	3	87,200	2,433	,044	Yes difference p<,05
	Within Groups	17775,701	496	35,838			
	Total	18037,302	499				
Opinion	Between Groups	504,351	3	168,117	1,371	,251	No difference p>,05
	Within Groups	60811,607	496	122,604			
	Total	61315,958	499				

As shown in Table 11, no significant difference was found between the information (p =, 991) and opinions (p =, 251) according to the classes of primary school students (p>, 05). However, there was a significant difference according to the level of behaviour (p =, 044, p <, 05). There was a significant difference between those in the second year and those in the third year after the Tukey test conducted in order to find out in which group this difference was. According to this difference, the behaviour levels of those in the second year($\overline{X}$ =26.54) were lower than those in the third year ($\overline{X}$ =28.31).

5.2.3. Findings Based on the Third Sub-problem

2. Is there any significant relationship between the environmental knowledge level of secondary school students in Libya and their attitudes towards Climate change problem and genders?

Table 12: Knowledge, Behaviours and Opinions of Student According to their Gender T-test

Knowledge	N	$\overline{X}$	SS	t	df	p	Explanation
Female	243	17,04	3,30	,148	498	,746	p>.05 Insignificant difference
Male	257	17,16	3,25				
Behaviour	**N**	$\overline{X}$	**SS**	**t**	**df**	**p**	**Explanation**
Female	243	27,93	6,17	1,118	498	,062	p>.05 Insignificant difference
Male	257	26,92	5,82				
Opinion	**N**	$\overline{X}$	**SS**	**t**	**df**	**p**	**Explanation**
Female	243	90,53	11,06	,052	498	,233	p>.05 Insignificant difference
Male	257	89,34	11,14				

As seen in Table 12, no significant difference was found according to the knowledge, behaviours and opinions of the students towards the climate change were not significantly different according to gender ($p < 0.05$).

5.2.4. Findings Based on the Forth Sub-problem

3. Is there any significant relationship between the environmental knowledge level of secondary school students in Libya and their attitudes towards Climate change problem and population?

Table 13: Knowledge, Behaviours and Opinions of Students According to the Population of their Place of Living ANOVAs Test

		Sum of Squares	df	Mean Square	F	P	Explanation
Knowledge	Between Groups	159,402	4	39,851	3,795	,005	Yes difference
	Within Groups	5197,548	495	10,500			p<,05

	Total	5356,950	499				
Behaviour	Between Groups	114,520	4	28,630	,791	,532	No difference p>,05
	Within Groups	17922,782	495	36,208			
	Total	18037,302	499				
Opinion	Between Groups	525,136	4	131,284	1,069	,371	No difference p>,05
	Within Groups	60790,822	495	122,810			
	Total	61315,958	499				

As shown in Table 13, no significant difference was found between the behaviour of the primary school students according to the population of the place where they lived (p =, 532) and their opinions (p =, 371) (p> .05). However, there was a significant difference according to the level of knowledge (p =, 005, p <, 05). After the Tukey test, there was a significant difference between the group living in places where the population was less than 500 and the places where the population was between 5000 and 1000. According to this difference, it is seen that the level of knowledge of the students living in places where the population was less than 500 ($\overline{X}$ =16.56) was lower compared to the level of knowledge of the students living in places where the population was between5000 and 10000 ($\overline{X}$ =17.84). According to this result, the level of knowledge about climate change is observed to increase even more as the number of population increases.

5.2.5. Knowledge Test Results

In this part of the study, findings and interpretations related to information test questions related to climate change are presented.

Table 14: Understanding about Climate Change Answers (Frequency Test)

Questions	True F	Wrong F	Don't know F
1) A stronger global warming of carbon dioxide has possible than all other greenhouse gases.	245	89	166
2) Transfer of human settlements, flora and fauna and diseases resulting from climate change.	240	141	119
3) Climate change cannot be mitigated by both low consumption or production	188	164	148
4) Depletion of ozone will improve the impact of global warming and global	223	121	156
5) Due to change of climate, a species extinction will happened because of rise in sea level	206	149	145
6) "Kyoto Protocol" has already ratified by The US government.	164	134	202
7) Methane is a greenhouse gas.	179	140	181
8) To solve the problem of climate change, development of Sustainable will be the suitable solution	215	136	149
9) Increased concentration of carbon dioxide in the atmosphere caused by burning of fossil fuels and deforestation	218	125	157

Having looked at the results of the information test on climate change in Table 14, it can be seen that the answers of the participants to the problems were mostly correct. According to this finding, it can be said that the participants were averagely aware of climate change.

Table 15: Responsibility for Climate Change Problem in Libya

People/institutions	Not responsible at all F	Small portion of responsible F	Half of the responsible F	Large portion of responsibility F	Almost all responsible F
1) The Government	108	93	90	**117**	92
2) Industry and business sector	95	**151**	89	110	55
3) Consumers/people in the community	100	114	111	**118**	57
4) You as individuals	93	**151**	94	100	62

Having a look at Table 15, as answers to the 117 questions asked about *"Responsibility for the Climate Change in Libya"*, 117 of the participants ticked *"government"*, 151 participants ticked *"industry and commerce sector"*, 118 participants ticked *"consumers/ people in community"* and 151 participants ticked *"individuals"* as the responsible. According to this finding, it can be said that the participants had an average awareness of the responsibility for the climate change in Libya.

CHAPTER VI
CONCLUSION AND RECOMMENDATIONS

The researcher concluded that there is a clear correlation between awareness of climate changes and the educational level of Libyan students studying in high school, where the respondents had a number of tariff means that contributed to raise their awareness, climate changes which directly contributed to the increasing awareness among the respondents.

Analysed of knowledge, behaviour and opinion on climate change showed that the participants possess average knowledge regarding the climate change. The positive behaviours regarding climate change are higher than knowledge and behaviours. However, this difference may be due to the fact that many of the materials were used that measure the opinion differences.

The results highlighted many of points that require a concerted effort from everyone in order to create awareness among the society with regard to climate changes in Libya, these are integrated efforts and roles between official institutions and voluntary organizations working in this field, and extends it to educational institutions at all stages as well as the media sources should play a bigger role in spreading awareness of climate knowledge.

We must keep pace with technological developments leap in the awareness through innovation and development and agree on the human motivation as the engine of development. Therefore we must take into account all factors that may cause failures, for that and for the humanity we need to build a new world and share our experiences with all other communities around us.

The problem of climate change is a global problem caused by the major industrialized countries. The behavior of citizens in many countries towards the environment contributes to this problem. The unjust cutting of forests for the purpose of reclamation of land for agriculture or the establishment of cities and enterprises, These behaviors have an impact on the environment and the climate, so everyone should work to reduce the causes of climate change, that the holding of meetings and conferences alone is not enough, the major countries must abide by international

conventions, major industrial enterprises must invest For example, the United Nations Educational, Scientific and Cultural Organization (UNESCO) should support governments and voluntary organizations to promote an environment-friendly culture by developing constructive and effective educational and educational curricula that have a significant impact on Students and students at different educational levels, the problem of climate change is one of the environmental problems for which more efforts must be made. It works for all for our motherland.

6.1. The Results

The sampling group composed of 500 participants (Table 6), 243 (%48.5) female, 257 (%51.3) male (n=500). The majority of them were 16 years old (%39.9) (Table 7).

When the participants' average points in knowledge, behaviour, and views were concerned and their possible minimum and maximum scores from the related scales are examined, it can be assumed that they have an average knowledge level (X=17.09) (Table 11). Their views, on the other hand, are higher (X=27.41) compared to their knowledge and behavior. However, this difference may due to the number of items measuring views. Tetik & Acun (2015) reached to the similar results in their studies.

According to the participants' classes in this research, a significant difference has not been noted between their knowledge (p=, 991) and their views (p=, 251). However, a significant difference has been noted in their behavioral levels (p=, 044, p<, 05). In order to specify the group with this difference, Tukey test was administered, which indicated a significant difference between the ones in their second and the ones in their third year. The difference was noted behavioral level of the ones in their second year was lower (X=26.54) compared to the ones in their third year (x=28.31). This result indicates that as the participants' classes go higher, they develop more positive behaviors towards climate changes. Arslansoylu (2010) argued in his study that the level of class of the students does not affect their behaviours towards the environment and this argument seems parallel to the results of this study.

As for gender, a significant difference in the participants' knowledge, behaviors, and views towards climate changes (p<05).has not been noted (table 12). Derman et al., (2013) reached the same result in their study. This result falls in with the findings of this research. However, in their study, Bronwen, Stanisstreet, and Boyes (2004) specified a significant difference in students' views on climate changes as to gender.

As it can be seen in Table 13, a significant difference (p>.05) has not been noted in primary school children's behavior (p= ,532) and views (p= ,371) according to the area they live in. Aslan's study (2005), which did not note a significant difference between class position, environmental attitude and behaviors, supports the finding of this research. However, a significant difference was noted according to the level of knowledge (p=, 005. P<, 05).

The result of Turkey test administered to specify the groups with the difference pointed to a significant difference between the areas with less than 500 inhabitants and the areas with inhabitants between 5000 and 10,000. In the light of this difference, it can be seen that the level of knowledge (X=16.56) in the areas with less that 500 inhabitants compared to areas with inhabitants between 5000 and 10,000 (X= 17.84). According to this finding, it is observed that the level of knowledge in climate changes rise parallel to the rise in population.

As noted in (Table 14), the participants gave mostly correct answers to the test questions on climate changes. To the question, "Who are responsible for the climate change problems in Libya?", 117 participants answered as "the state", 151 answered as "the trade and industry sector", 118 answered as "consumers/the people", and 151 answered as "individuals" (Table 115). This finding indicates that the participants have average information about climate changes in Libya. In their studies on the subject matter, Şenel and Güngör (2008), Tetik & Acun (2015) reached similar findings.

In conclusion, it has been found out that students in secondary education in Libya have an average knowledge in climate changes. In order to prevent environmental problems through which we have been experiencing negative effects, and provide a sustainable environment, individuals should be well informed through

education about being responsible for, aware of and sensitive in the protection of the environment.

6.2. Recommendations

In the light of the findings in this study, the following are recommended;

- It is of crucial importance to provide awareness of climate changes and different values in preventing the changes for a sustainable world. Educating individuals in the subject matter should not be limited only by classroom teaching, but the whole community should be involved in.

- One of the priorities should be, starting from individuals, all public organizations, trusties and educational organizations, to raise awareness and organize activities to find ways for solutions.

- Programs should be drawn to raise awareness and individuals should be well informed about the subject matter

- School curriculum should include climate change topics and its inevitable direct or indirect effects.

- Environmental organizations should put intensive efforts in the subject matter

- Regular exhibitions and conferences on climate changes and global warming should be held in schools and brochures or posters should be prepared to draw students' attention.

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Appendixes

Appendix A

STUDENTS' PERCEPTION ON CLIMATE CHANGE AND ENGAGEMENT IN LOW-CARBON BEHAVIORS: IMPLICATIONS FOR CLIMATE CHANGE EDUCATION IN LIBYA

I am a Master student in Near East University in North Cyprus. I studied in Environmental Education and Management Programs. I am now conducting a survey entitled "Students' Perception on Climate Change and Engagement in Low-carbon Behaviors Implications for Climate Change Education in Libya.

Master Student:
Amrajaa ALMASAHY

EK-1

1. **Please tick your answer by your subjective judgment and feeling.**

1. Grade ----- 2. Age:--------- 3. Sex: Girl------- 4. Boy ----

2. **The population of the area where you live:**
    1. Less than 500
    2. Between 500-2000
    3. Between 2000-5000

EK-2

ATTITUDE TOWARD THE ENVIRONMENT (ENVIRONMENTAL WORLD VIEWS)

Human's Relationship With Nature	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1) Plants and animals have as much right as people to live.					
2) There are too many people that the Earth can support.					
3) People are clever enough to keep away from ruining the environment.					
4) People must obey the laws of nature.					
5) When people interfere with nature, it often produces disastrous results.					
6) Nature is capable to handle the bad effects caused by human activities.					
7) People are supposed to rule over the rest of nature.					
8) People are severely abusing the environment.					
9) People will know enough about how nature works to be able to control it.					
10) If people don't change their current ways of living, the Earth will suffer from severe environmental disasters.					

EK-3

PERCEPTIONS OF CLIMATE CHANGE PROBLEM

The effects of climate change problem on worldwide cities are becoming more obvious. The following part attempts to know your perception on climate change problem. To what extent do you agree with the following statements?

STATEMENT ABOUT CLIMATE CHANGE CONCERN	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1) The effects of climate change are becoming more serious.					
2) I am really worried about the effects of climate change in the world.					
3) I always pay special attention to climate change news.					
4) I believe that human activities are the primary cause of climate change problem.					

EK-4

THE EFFECTS OF CLIMATE CHANGE ON VARIOUS ASPECTS IN LIBYA

In Libya, how serious are the effects of climate change do to the following aspects?

ASPECTS OF EFFECTS	Very unserious (1)	Unserious (2)	Moder (3)	Serious (4)	Very serious(5)
1) Ecological environment and wildlife					
2) Industrial and commercial activities					
2) Built environment and infrastructure					
4) Energy use and supply					
5) Food supply					
6) Water supply					
7) People's					

EK-5

HOPE ON MITIGATING CLIMATE CHANGE PROBLEM

This part attempts to know your perception on mitigating climate change problem. To what extent do you agree with the following statements?

STATEMENTS ABOUT THE HOPE OF MITIGATING CLIMATE CHANGE PROBLEM	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1) I believe that my individual actions can help mitigate the climate change problem.					
2) I believe that I can influence others to adopt low-carbon lifestyle to combat climate change.					
3) I believe that I myself can do many things to contribute to the improvement of climate change problem					
4) I trust that technology can help mitigate the climate change problem.					
5) The governments and businesses in more and more countries take the issue of climate change seriously.					
6) The awareness about climate change has increased significantly in society of Libyan society.					
7) The problem of climate change is too serious and our actions are already too late.					

EK-6

RESPONSIBILITY FOR CLIMATE CHANGE PROBLEM IN LIBYA

To what extent do you think the following people/institutions have the responsibility for climate change problem?

PEOPLE/INSTITUTIONS	Not responsible at all (1)	Small portion of responsibility (2)	Half of the responsible (3)	Large portion of responsibility (4)	Almost all responsible (5)
1) The Government					
1) Industry and business sector					
3) Consumers/people in the community					
4) You as individuals					

Response approach to climate change effects in Libya

Extreme weather conditions (e.g. heavy rain, very hot weather) in Hong Kong have occurred more frequently in recent years. To cope with the negative effects triggered by climate change, which of the following response approaches are you adopting now? (Choose only ***ONE*** answer):

1. Since extreme weather conditions do little effect on my living, no special action has been taken☐
2. I try to adapt to environmental changes (effects) brought by climate change☐
3. I actively change my current lifestyle to reduce greenhouse gas emission☐
4. Both 2and 3☐

EK-7

ENGAGEMENT IN LOW-CARBON (GREEN LIVING) BEHAVIOR

How often do you engage in the following low-carbon (green living) behaviour?

LOW-CARBON (GREEN) BEHAVIOR	Almost never engage (1)	Seldom engage (2)	Sometimes engage (3)	Often engage (4)	Very often engage (5)
1) Buy products with less packaging.					
2) Bring my own bag when shopping.					
3) Separate waste for recycling.					
4) Meals with more vegetables and less meat.					
5) Buy organic food.					
6) Avoid food residue.					
7) Buy clothes made of natural or organic materials.					
8) Use public transport, bike, or walk to school.					
9) Adjust the thermostat of air-con to 25.5 °C in summer.					
10) Participate in green (low-carbon) activities in schools and community					

EK-8

MAJOR HURDLES IN ADOPTING LOW-CARBON BEHAVIOR

This part attempts to identify major hurdles in affecting your decision to adopt low-carbon lifestyle. Please state the extent to which you agree with the following hurdles.

MAJOR HURDLE	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1) It is hard to change my existing lifestyle because I already used to.					
2) Practicing low-carbon lifestyle needs additional commitment (e.g. time and money).					
3) Lack of opportunities and availability in society (e.g. facilities/choices).					
4) Lack of knowledge and skills on how to practice low-carbon lifestyle.					
5) Lack of interest to do so					

EK-9

UNDERSTANDING ABOUT CLIMATE CHANGE

The following are questions to test your understanding of climate change issues.

QUESTIONS	True (1)	Wrong (2)	Don't know (3)
1) Carbon dioxide has a stronger global warming potential than all other greenhouse			
2) Climate change will lead to relocation of human settlements, plants, animals and disease.			
3) Reduce consumption and production cannot help mitigate climate change problem.			
4) The ozone depletion will enhance the greenhouse effect and global warming			
5) Climate change will lead to global sea level rise and extinction of species			
6) The US government has ratified "Kyoto Protocol" already.			
7) Methane is a greenhouse gas.			
8) Sustainable development is a solution to climate change problem			
9) Burning fossil fuels and deforestation will increase the concentration of carbon dioxide in the atmosphere			

Appendix B

Sustainable development goals & environmental education

The Sustainable Development Goals, which have been built on the Millennium Development Goals, have 17 goals. The following section sets out some of the proposed environmental education and awareness programs:

No	Sustainable Development Goals	Proposed Environmental Education and Awareness program to achieve SDGs
1	No Poverty	Education and training on livelihood related activities can be developed considering utilization of ecosystem goods and services. Such programs not only help to enhance livelihood options for poor people but also improve environmental conservation to ensure sustainable livelihood.
2	Zero Hunger	Environmental education, training and awareness programs can be developed for wise use of natural resources to support poor people to address their hunger during stress period.
3	Good Health and Wellbeing	Dissemination of information and education regarding environmental pollution and degradation is very critical to create awareness on the health impacts of pollutions and degradation. Environmental education and awareness programs should consider impacts of health due to environmental pollution and degradation. In addition, awareness program may address food nutrition in the formal and informal education systems and also to the people living in the rural and urban settings.
4	Quality Education	In order to ensure quality education, environmental education must be included at all levels such as primary, secondary and tertiary to enhance awareness to understand environmental management as well as sustainable use of natural resources in production system. Considering differentiated levels, various environmental education

		programs must be developed.
5	Gender Equality	Special environmental education and awareness program must be developed for inclusion of women and children. Such program can be implemented through both formal and non-formal education systems. Women and children are more vulnerable environmental pollution and degradation that underscore priority action must be taken to educate and aware them on the environmental issues.
6	Clean Water and Sanitation	Comprehensive environmental education and awareness program should be developed on access to clean water, basic knowledge about hygiene and sanitation, safe drinking water and water conservation. Mass awareness campaign is critical for achieving this SDG.
7	Affordable and Clean Energy	Education and awareness raising campaigns should be initiated in the rural, peri-urban and urban areas on access and use of clean energy. Awareness raising on renewable energy and energy conservation must be developed as a part of environmental education.
8	Decent Work and Economic Growth	Education and awareness program on environmental safety and risk minimization in working place should be developed and practiced. Workers must be aware and educated on environmental hazards at their working place to protect them from those risks.
9	Industry, Innovation and Infrastructure	Education and awareness program on the need of environmental impact assessment of polluting industries, establishment of environmental friendly infrastructure and use of green as well as clean technology should be developed and disseminate through formal and non-formal education system. In addition, mass awareness on industrial pollution must be implemented.
10	Reduced Inequalities	Environmental education and awareness should be included as a part of reduce inequalities program. Special emphasis must be given to women, children and disadvantage groups

		of population.
11	Sustainable cities and communities	Due to various reasons people are migrating from rural areas to cities. This migration essentially crating huge pressure on the caring capacity of cities and impacting environmental setting of cities. Environmental education and awareness program must be developed with a focus on ENVIRONMENTAL EDUCATION AND AWARENESS 5 sustainable cities and communities.
12	Responsible consumption and production	Overharvesting and misuse of resources have been identified as major challenge in environmental and natural resource management system. Environmental education and awareness program should be developed and implemented to ensure wise use of resources and responsible consumption for sustainable use and conservation of resources.
13	Climate Action	Climate change is new challenge for humankind. Impacts of climate change are diverse and not well known to us, it must be address with adequate attention in education system. Environmental education and awareness program should develop comprehensive program on climate change to generate knowledge on climate change and include this program in all levels of education and create awareness among general mass to address adverse impacts of climate change.
14	Life Below Water	lack of knowledge in life below water, oceans and seas is very limited. Environmental education must address dearth of knowledge in oceans and seas and develop educational and awareness program to disseminate knowledge and create mass awareness. In addition, marine pollution also identified as major challenge for conserving marine resources and its sustainable use. Education and awareness program must address this issue with due emphasis.
15	Life on Land	Sustaining healthy life on land obviously depends on healthy environment and ecosystems. Education on

		environment is essential to understand ecosystems, its goods and services, pollution, degradation and need for conservation to sustain its goods and services for human being.
16	Peace Justice and Strong institutions	Education and awareness program on environmental justice for all should be developed and implemented widely. Department of Environment must be strengthened to deliver environmental peace and justice program for all citizens of the country
17	Partnership for the goals	We must consider "environment for all" in environmental education and awareness program development and implementation approach. Therefore environmental education and awareness program must be implemented through partnership of government, non-government, private, professional groups and local communities.

Source: United Nations, n.d, "Sustainable Development Agenda", viewed 1 April 2016

Curriculum Vitae

My name is Amrajaa Al Amashaya. I was born on 10/07/1987 in Libya, in the city of Sirte. In 2002, I started high school and completed in 2006, and began the Faculty of Arts and Sciences in the period 2006-2007 areas west of the mountain Gharyan Division of Life Sciences. I received a Bachelor's degree in life sciences in I had 2010-2009 the opportunity to travel to the Republic of Northern Cyprus to get a good education in this country. My first year in Cyprus I studied English for two semesters in the fall of 2014 to improve my English, my master began -in (2015 on the management (2016of environmental education at the University of the Near East.