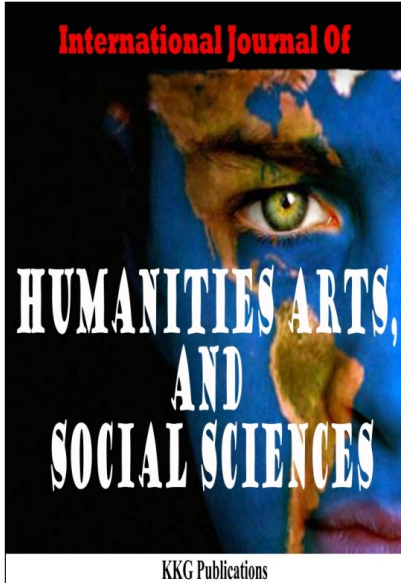


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ROLE OF GEOGRAPHY IN ENVIRONMENTAL EDUCATION

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Abstract. Geography is the science which studies the human-space interaction according to the principle of cause and effect, and it deals with space and human who uses it for economic purposes. What really matters in this human-environment interaction is that benefits should become permanent and sustainable. This phenomenon is extremely important for future generations if we desire them to continue to benefit from the geographical environment. When we look at the current perception of the environment and the related application, the present state is not very encouraging. I'll give you a few examples; field grabbing race in polar regions under the pretext of researching, construction of technological cities in desert areas, destruction of tropical forests for agriculture and settlement purposes, oil drilling practices in the open seas, increasing presence of nuclear facilities and so on. Such human activities lead to irreversible damages to the natural environment. Also due to misapplication of human activities such as settlement and industrialization, mankind confronts such an unhealthy environment where the soil lost all contact with the sky, global warming, extreme pollution in the atmosphere and hydrographic elements. With an effective environmental education, it is possible to prevent the excessive and improper use which nature cannot compensate anymore. Ever-increasing world population creates the biggest problem that prevents sustainable use of scarce resources. Undoubtedly protecting the natural environment does not mean disuse. In this respect, the question of how to use the natural environment, how to plan and how to ensure environmental awareness in large populations come to the fore. In order to answer these questions it is necessary to know the structure and the properties of the natural environment for the first place. At this point, the place of geography comes to the fore in an effective environmental education. This study emphasizes effective environmental education, and attempts to explain the functions of the geography and how it should be utilized in environmental education.

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INTRODUCTION

Globally increasing population requires the formation of new settlements; thus, land use also increases along with the growing population. Undoubtedly, the natural resources provided by the earth are not limitless.

Natural resources rapidly deplete and are degraded due to the growing population. Unplanned settlement, industrial and other human activities on farmlands and degradation of geographical environment due to aggravating pollution are likely to deprive the upcoming generations of these resources. To prevent excessive and faulty exploitation of the nature and its irreversible effects is possible by means of an effective environmental education.

Geography along with other disciplines plays an important part in environmental education, which helps people acquire the awareness of the earth, natural resources and their value. Geography as a holistic discipline deals with the natural mechanism, investigates human and economic activities together with the interaction between man and nature and helps individuals adopt a holistic viewpoint.

Sustainable Environment

Ever since the Neolithic age, humankind has been reshaping the earth with their agricultural activities. Humans' spatial activities, including agricultural ones, on certain lands mark a turning point in the human history. The most important outcome of the transition from a hunting-gathering-nomadic to a sedentary life is increase in population and humans' properties (Unal, Mancuhan & Sayar, 2001). As a result, the importance of over- and underground resources has increased.

With the advent of the industrial revolution, underground resources were used more and more to satisfy the needs of the ever-increasing population. Moreover, the rapid growth and expansion of cities brought along population increase (Goney, 1995) and great migrations took place in this period (Tuncdilek, 1988). This gradually depleted underground resources and the technology used rapidly and irreversibly polluted atmospheric and hydrographic resources. This means that next generations will face serious problems in meeting

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their vital needs. Here, the importance of sustainable environment comes to the fore.

Generally speaking, sustainable environment allows upcoming generations to avail themselves of natural resources and refers to the establishment of human, economic and particularly industrial activities with an environment-friendly approach. However, today agricultural reassignment and deforestation of forest areas are at their full speed (Ozguc & Tumertekin, 2012). The following nine issues are among the most crucial problems for a sustainable environment:

- Nuclear activities whatever the purpose is,
- Overexploitation of underground resources, oil and natural gas drilling in particular, in an irreversible manner,
- Destruction of mountains to reveal ore beds and disruption of the ecosystem on them (Ozguc & Tumertekin, 2012)
- Overexploitation of mines quite often leads to the discharge of such metals as iron and manganese into drinking water systems (Gunes Durak et al., 2013)
- Construction zoning on fertile arable lands of I-IV class,
- Gases given off by industrial facilities and resulting global warming,
- Global water resources rapidly sullied by settling, industrial and agricultural activities,
- Destruction of natural flora far from settlements, which should be protected, due to human and economic activities and the resultant drought owing to increasing evaporation (Erinc, 1996)
- Destruction of natural resources by global and local wars,
- Efforts to be influential in critical glacier areas and polar mainland under the pretext of research,
- Construction of technological cities on deserts,
- Atmosphere's incapability to function properly due to greenhouse gases and global warming (Donmez, 1984).

FIGURE 1
Nuclear Activities



FIGURE 2
Global Warming and Drought



FIGURE 3
Melting Glaciers



FIGURE 4
Oil and Marine Pollution



Enviroinmental Education and Geography

To prevent the above mentioned environmental issues can be achieved with an effective and rational environmental education. Child and adult education programs are important matters, which should be organized by states themselves to raise an environmental awareness across a large population. In this study, we will attempt to outline how geography as a discipline can be utilized in this education rather than how environmental education should be.

So as to produce methods to adopt in environmental education, such as the basic elements of active teaching processes as the association between what is learnt and real life, satisfaction of individual needs and motivation should be observed. This is possible with the organization of environmental education processes according to “constructive” learning approach and related “research and discovery” teaching strategies and by prioritizing “innovative” learning settings to get students actively involved (Ozdemir, 2007).

As is known, geography is a positive science based on cause-and-effect dichotomy and investigating the interaction between

human and space from the widest perspective.

Therefore, its function is to provide individuals with the data on the operational mechanism of the nature and the activities of humans who benefit from this. From this viewpoint, geography should be attached greater importance in environmental education.

The increase of geographical studies in environmental education is supposed to help these areas become sustainable economic areas, pass down cultural values to next generations, raise environmental awareness, and eventually fend off many problems, particularly environmental ones (Kahraman, 2011). As far as its principles are concerned, geography does not develop techniques and methods as to how to sort out environmental problems. In consideration of environmental education, the most significant contribution of geography is to reveal natural and human factors causing environmental problems. By this way, geography contributes to the achievement of the behavioral change intended in the environmental education by establishing a cause-and-effect relationship.

When producing an environmental education program, this

feature of geography should be considered and fieldwork as the practice part of the education should be included in the program along with causality-oriented education. Some ex-

amples of environmental issues related to basic geographical parameters are presented in the following table.

TABLE 1
Environmental Problems Associated with Some Geographical Parameters

Geographical Parameters	Cause	Environmental Solution
Climate	Greenhouse gases	Global warming
Topography	Education	Landslide
Flora	Settlement/Industry	Drought
Hydrography	Excessive and faulty exploitation	Environmental pollution
Wind	Weak flora	Erosion
Population	Economic needs	Immigration
Settlement	Unplanned construction	Environmental pollution
Industry	Solid, liquid and gaseous wastes	Pollution in atmosphere/seas and terrestrial resources
Transportation	Highly released gases	Pollution in atmosphere/seas and terrestrial resources
Tourism	Construction on the coastline	Marine pollution/Destruction of natural coasts
Agriculture	Agricultural pesticides/agricultural wastes	Pollution of underground waters and earth

The table shows that geography indeed plays a crucial part in environmental education in the result-oriented education widely used today, geographical environment perception does not develop as desired due to the lack of enough information on geographical habitats where these events take place. What we mean by behavioral changes and the intended increase in information is to raise individual who can read maps, interpret the environmental ecology where he/she lives according to basic geographical principles, identify over-and underground resources, analyze environmental problems through causality and develop a holistic approach. Besides, environmental education plays a notable part in raising individuals comfortable in their skins and respect themselves (Wilson, 1996).

In such a short period, we have attempted to outline the role of geography in environmental education. However, the researcher plans to broaden the scope of this paper to produce a future project with fieldwork included and to develop an environmental education plan.

CONCLUSION AND SUGGESTIONS

The natural environment hosts numerous human and economic activities, particularly settlement. Hence, natural resources deplete and are degraded due to overexploitation over time. The elimination of these problems and life in a clean and safe environment can be achieved with a well-structured extensive environmental education.

The intended outcomes of these educational practices are (a) to raise an awareness of environmental problems, (b) to help

participants acquire competencies appropriate for behaviors caring the environment, and (c) to teach students to behave responsibly towards the environment (Klautke & Kohler, 1991). Diversification of environmental education programs according to every age group and educational stage is essential to raise an environmental awareness (Gulay & Ekici, 2010). Up to now, we have attempted to highlight the importance of geographical principles in an effective environmental education to allow next generations to adequately avail of a sustainable environment. Following are our suggestions for environmental education:

- When designing environmental education programs at every level, such discipline as geography, ecology, biology, chemistry and the like should be included.
- Conscious, responsible and sensitive individuals should be raised to avoid and prevent serious environmental issues (Sarigoz, 2013).
- Environmental education appeals to cognitive, affective and psycho-motor learning domains of students (Erten, 2004).
- Fieldwork should be included in the environmental education to introduce geographical principles at early ages and to ensure the permanence of learning.
- The curriculum should feature geographical properties and regional economies in different places of the world.
- Applied geography should be included in environmental education.
- Importance should be attached to in-service training in

- order for environment educators to stay informed about new developments and to refresh their knowledge.
- Adult-oriented educational activities should be organized to increase the environmental awareness and governed/supported by states.
- Publications and informative texts in press and other media should be released to reach out for larger populations and help individuals become more conscious about environment.

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