

# Global Climate Change Education in Turkey

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## Abstract

Especially in the last century the effect of climate change on people life has been increasing. It is estimated that these effects will grow in future. Education is very important in increasing public consciousness about climate change. In the last decades global climate change has been given greater importance by the Republic of Turkey's Ministry of National Education and non-governmental organizations in Turkey. In this study, global climate education in Turkey especially in primary schools is examined. Global climate education must be taught through decision-making, critical thinking, researching, discovery and not only as giving information. The place of the subject in the national primary education strategy and some projects that are conducted by Republic of Turkish Ministry of National Education are mentioned.

Keywords: Global climate change, education, primary education, projects

## Introduction

Climate change is often used to describe any kind of change in climate that may be natural or human-induced. Global warming refers only to the human-induced climate change that is predicted to have an overall warming effect on Earth's average temperature (Union of Concerned Scientists, 2002). Global change will affect every citizen, every part of the environment and our natural resources, and thus practically every aspect of our lives—our economy, our urban and suburban development patterns, natural areas we protect, and our life styles. While climate change research is evolving rapidly with the growing recognition of the importance and urgency of the topic, teaching about climate change is still in its infancy. For this reason there has recently been great interest in educating pupils, the future citizens, about it.

According to UNESCO (2009) Education needs to take into consideration the following implications of climate change:

- All levels and forms of existing educational and teaching and learning programmes need to be reviewed and re-oriented to address the causes and consequences of climate change.
- Climate change requires educators to include new content into education, training and public awareness programmes.
- Creativity, problem solving and social transformation skills need to be developed and nurtured.
- Positive, participatory action and solution-centred approaches to education and learning need to be developed.

Educating students about issues of global climate change is a challenge for educators because the traditional didactic strategies are inappropriate and so new innovative instructional approaches and techniques should be created. Traditional ways of teaching, which are largely based on the transmission of knowledge, are inappropriate as they do not help pupils to use the knowledge learned to understand real issues from everyday life (Papadimitriou, 2004). The challenge of education for global climate change is to make these global issues meaningful to learners by focusing on individual contributions to the problems, and then,

using problem-solving, decision-making strategies to develop, refine and redirect the thinking and the learning. For this, instruction in hands-on and computer based classroom activities, field trips, project work can be helpful.

In the last decade a lot of research has been conducted concerning pupils' and adults' understanding of global warming and other global environmental problems. These studies uncovered the misconceptions and misunderstandings people, of all ages, hold of many aspects of these issues in terms of causality, possible consequences, and possible cures (Boyes and Stanisstreet, 1992; Dove, 1996; Boyes and Stanisstreet, 1998; Rye *et al*, 1997; Andersson and Wallin, 2000). Research has shown that misconceptions and misunderstandings about many environmental issues, climate change included, are not only held by pupils but by teachers as well (Fortner and Corney, unpublished; Papadimitriou, 2001). These misconceptions and misunderstandings are probably due to, among other things, the complexity of the science involved, the uncertainties and the controversies surrounding them. By understanding these misconceptions, teachers are in a better position to devise strategies for successfully addressing them in the classroom.

## **Global Climate Change Education in Turkey**

As all in the world, in Turkey some educational studies are being undertaken in the field of changing global climate. The main aims of these studies are to make students conscious of their environment, to improve their environmental attitudes, knowledge and behaviour and to increase consciousness in society. Therefore global climate change became part of curriculum in primary and high schools. The teaching methods and materials are designed again according to these aims.

In Turkey the primary school program changed in 2005. According to the new program students should be "compatible" with the environment. Critical thinking, decision making and problem solving were the main skills of the program. In this framework the subject of global climate change is placed in the primary education curriculum. It is in the 7<sup>th</sup> grade topic in the unit called "Bridges between Countries". In this unit the aims of international organisations about environment are dealt with. Students should be made aware of their individual responsibility about environmental problems. Global climate changes are seen in the environmental problems dealt with in this unit (MEB, 2005). Although the subject is only in the social studies curriculum all lessons give place to global climate change.

In education for global climate change knowledge versus misconceptions are important. Studies show that as in other countries students and teachers do not have enough information available about this topic. Kahraman *at al.*, (2008), explored levels of awareness and knowledge about global warming of primary teacher training students'. To reveal this, a test composed of four open-ended questions was developed and validated by researchers. Data from the test, that is, student written documents, were analysed individually through content analysis. The findings indicated that the majority of the students have a low level of awareness and knowledge about global warming. According to Pekel *at al.* (2007) teachers should give much more importance to teaching global environmental issues.

## **Projects Conducted by National Ministry of Education and Non-Governmental Organisations**

In Turkey, there are many projects being carried out to improve the awareness of global climate change. Some of them are described here.

### **1. Our Future is Warming Project**

In 2008 TEMA (Turkish Foundation for Combating Erosion, Reforestation and the Protection of Natural Habitats) and TURMEPA (Turkish Marine Environment Protection Association) carried out a project about global climate change and its reasons, solutions and precautions. This was for the whole of Turkey, with the slogan “Our future is warming”. They will carry out some education studies. Therefore in forests, cultivation fields, pastures, seas there were some hazardous developments and they wanted to find public opinion on decreasing the effects of global climatic change. This work will be done on the land by TEMA and on the seashores by TURMEPA. Turkish Marine Environment Protection Association will travel with their ship to 28 city centers which have seashores. They want to influence public opinion against global climate change and mainly to educate children about it. The project hopes to reach 810.000 people by 2011 in 81 city centers (TEMA, 2008)

### **2. The Footprints of Tomorrow Project**

This project seeks to create public consciousness about global climate change in second and third grade primary school students with the help of TOCEV (Turkish Education Association for High-Performing Needy Children) and MEB (National Ministry of Education). The aims of projects are:

- To create environmental conscious in the primary school students.
- To express the global warming with the view of children.
- To make the global climate change current issue with the exhibitions.
- To make connection and present information With the help of the “www”.

In the project students will gain knowledge about global climate change with movies, theatre plays and special books prepared for project. They are planning to educate 10.000 students by the end of 2009 (MEB, 2009).

### **3. GreenPack Project**

The Greenpack Project is carried out with the association and participation of the Regional Environmental Center for Central and Eastern Europe (REC), REC Turkey and Turkish Bird Research Society and Nature Society, along with Ministry of National Education, Ministry of Environment and Forestry, Non-Governmental Organizations (NGOs), and lots of related institutions, foundations and individuals.

The main theme of Greenpack Project is education for primary school students concerning sustainable development. The Project aims at developing a “sustainable development education” capacity which brings along with necessary contribution and possibilities for getting information about environment, environmental protection, having the ability to cope with the problems and sustainable approach.

Greenpack Project emphasizes on creating new models of behaviours at school, at home and in society and new values as well as a particular information accumulation about the environment. In this sense, students are, first, associated with their teachers in activities, then in argument, in role plays, and decision making. The main messages of the Greenpack Project are effectively transformed via the teachers and the students to other members of their families and to the society.

With the Greenpack Project, a multi-media education pack is prepared and through this, it is hoped to support sustainable development studies in Turkey. This multi-media education pack, in terms of sustainable development and environment issues, consists of syllabuses

intended to teachers, studying and information documents for students, a “mutual game” and a VCD/DVD and CD Rom.

Teachers from different disciplines teaching 10-14 year-old students will use Greenpack according to their own needs. After teachers are given a short course on the effective use of the advanced materials, some pilot schools will be determined in order to test the Greenpack. By means of a special web page, the teachers will be provided with information support and and experience sharing (Kolukısa and Balođlu Uđurlu, 2007).

National Ministry of Education sent a global warming circular letter to all schools in the frame of GreenPack Project. According to this letter, all grades of primary and secondary schools gives place to environmental problems, water problems and water saving, health and environment issues. In these lessons GreenPack Environmental Education set is going to be used.

## **Conclusion**

If some measures are not taken, global climate change will increase. To stop the climate changing, society should be more aware of the facts. Education plays very important role in increasing consciousness. Teaching about the changes in global climate will increase the student’s behaviour and attitudes towards environment in a positive way. So many countries consider it a great importance to global climate change education like Turkey. In Turkey, the subject global climate change is found in social studies lesson. But global climate change is an interdisciplinary subject so it should be found in almost every subject. Beside lessons National Ministry of Education and some non-governmental organizations (NGO) are carrying out projects about global climate change. The aim of these projects is raising students’ and pupils’ awareness of global climate change. Some of these projects are “GreenPack Project”, “Our Future is Warming Project” and “Footprints of Tomorrow Project”. In these projects the subject is taught with appropriate methods, techniques and materials. Global climate changing education lectured as decision-making, critical thinking, researching, attendance and some abilities not as only information.

Developing an adequate understanding of the global climate change concerns every student. And teaching this issue could aim at providing students with the appropriate problem-solving and decision making skills, inducing positive environmental attitudes, making lessons more popular and topical by connecting them to real world.

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