



Critical review

The green school project: A means of speeding up sustainable development?



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ABSTRACT

Climate change and energy problem are major challenges facing the human race. To solve these problems, administrators and policymakers all over the world are promulgating agreements, laws, standards and regulations. In the implementation of these policies, sustainable awareness of people on issues related to energy has greatly improved, but the low carbon concept is far from being popular. School, as a special community, not only should meet the demands of ordinary communities, but also have the possibility to spread awareness of the concept. Currently, the green school project has been launched in some areas of China, which aims at providing a better research environment and cultivating the concept of sustainable development to greatly promote trends of sustainable development. This article introduces the concept, requirement and rating system of green schools, which aim to cultivate more educated people with sustainable consciousness and improve the awareness of sustainable development.

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1. Introduction

With the deepening of industrialization, the past 200 years have witnessed global warming and climate change caused by discharge of greenhouse gases. According to reports by the Intergovernmental Panel on Climate Change (IPCC), global surface temperature increased 0.74 ± 0.18 °C (1.33 ± 0.32 °F) during the 100 years ending in 2005, and the rate of temperature increase in the past

50 years is 2 times higher than the past 100 years observed from 1856 to 2005 (IPCC, 2007). Under the background of global warming, many extreme climates around the world have been staged, such as blizzard, hurricanes, floods and drought. Meanwhile, some disasters occurred frequently, such as glaciers melting, sea level rise, the collapse of grain production, and species extinction.

However, mankind's use of fossil fuels not only has a warming effect on the weather, but also has caused the shortage of energy. Based on BP energy statistics, the proven mineral resources reserve can only meet the recent overall demand around the world. Mining at the current rate, the global oil reserves are only available for 40 years, natural gas and coal will deplete in just 67 and 164 years,

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respectively. At current levels, environmental issues and energy problems have become the focus of human beings, and “low-carbon economy”, “low-carbon city” and “low carbon era” has been the hot topic.

2. Great efforts made to deal with sustainable problems

To deal with these problems, many organizations, institutions and some government departments have made great efforts in some countries. According to the United Nations Environment Program (UNEP), more than 270 international environmental treaties have been set by 2012. In the early 1990s, the United Nations had discussed issues about international environment and development conferences and established the United Nations Intergovernmental Panel on Climate Change (IPCC). Meanwhile, many countries had signed international climate treaties. In June 1992, heads of governments around the world signed an international treaty titled United Nations Framework Convention on Climate Change (UNFCCC) during the United Nations conference on environment and development held in Rio De Janeiro, Brazil. It is the first convention in the world to comprehensively control CO₂ and other greenhouse gas emissions and to effectively cope with global warming to human economic and social disadvantage. Furthermore, it provides a basic framework for international cooperation for the international community in dealing with global climate change. Kyoto Protocol, which is the supplementary terms of the UNFCCC, was set at a meeting in December 1997. In February 2005, the Kyoto Protocol on reducing greenhouse gas emissions formally went into effect, and this was the first time that limits to greenhouse gas emissions was set in the form of regulations. On December 19, 2009, with joint efforts, IPCC made the non-binding Copenhagen Accord possible; it is designed to discuss the follow-up project, after the expiration of the Kyoto Protocol.

On February 24, 2003, the British government issued the Energy White Paper, and they announced in the next few decades, energy policy in Britain will focus on renewable and clean energy, and they will reduce the use of fossil fuels, such as coal, natural gas and nuclear energy. Later, many countries responded to them to support them. In March 2010, China and India formally agreed to join the Copenhagen Accord, and this could greatly reduce CO₂ emissions. China promised to voluntarily reduce CO₂ emissions to the level of carbon emissions in 2005 under the premise of reducing economic growth, where “carbon intensity” will be reduced by 40–45% by 2020. India announced that carbon emissions, excluding in the agricultural sector, will be slashed by 20–25% by 2020. China, the largest energy consumer and the largest CO₂ emitter in the world, must make more efforts to solve these problems. To solve the above problems, in addition to extensive agreements reached with other countries, the Chinese government has made significant efforts, such as introducing a series of plans, laws, regulations and codes for various fields (Li et al., 2014).

3. The importance to promote green school campus

For energy and environment related professionals, policy makers, students and researchers on environment and energy, they can accurately understand the above agreements and regulations, and they can actively put in place practices to protect environment and save energy. However, for personnel without any relation to these professions, they cannot fully understand these agreements and they have no idea on how to perform a sustainable concept. At present, although we have made great achievements, what we are doing is far from enough for universal access to sustainable development.

Presently, to actively respond to sustainable development initiatives, many areas have carried out green community activities. Schools not only have to provide students with a good living environment, but also is also potentially the birthplace of advanced ideas and trends; hence the green school project is rising quietly in some areas of China (Choi et al., 2014). By providing students with energy conservation and environmental protection context, students' consciousness of sustainable development will be greatly enhanced, at the same time they can actively participate in the green energy-saving campaign. Once they get out of the campus, they will become the main force of sustainable development. So it is of great significance to popularize the sustainable development (Simpson, 2003).

4. The concept of green school project

4.1. The proposal of green school project

The concept of the green school originated in an Ecological School Plan proposed by The Foundation of European Environmental Education (FEEE) in 1994. Its purpose is to make environmental education gradually penetrate into every sector of daily school management in an education classroom setting, and then to set up a comprehensive environmental management system for school. However, European green campus plan in early times was mainly confined to the level of environmental education in primary and secondary schools, or the level of sustainable education alliance in colleges and universities.

In 2007, with the deep research on the green building, United States Green Building Council (USGBC) launched National Green Schools Campaign, and they support green schools for everyone within this generation. To further its efforts to give access to green schools to all students within a generation, the U.S. Green Building Council (USGBC) has launched a new Center for Green Schools, which is funded by America's United Technologies Company. It is a very important step in the process of green school development, not only because they have a certain institution with funding, but also because the funded positions could become permanent in many places, as school districts realize the value of the position and begin paying salaries themselves. Compared with the green campus plan in Europe, Green Schools Campaign in United States covers all the school level, related students, teachers, principals, parents, government and other interest groups could experience comprehensive practice through green education, green space,

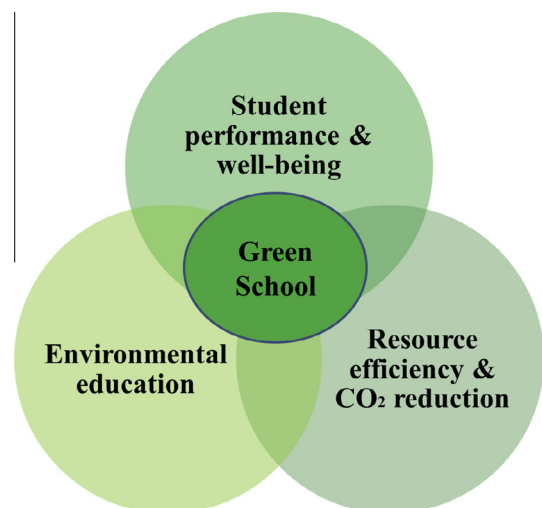


Fig. 1. The basic framework of green school.

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